ZONES OF CONTENTION:

a comparative analysis of the impact of two regimes of enrolment regulations in New Zealand

by
TIMOTHY JAMES STUBBS

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Abstract

A number of New Zealand studies have identified a relationship between enrolment regulations and school enrolments, in particular drawing attention to the negative impact that the abandonment of 'home zones' in 1991 have had on many lower decile and ethnically diverse schools. The progress of a group of secondary schools within a geographic area in New Zealand from before the introduction of Tomorrow's Schools in 1989 up to 2009 is tracked using quantitative data from the Ministry of Education, New Zealand Qualifications Authority and Statistics New Zealand combined with qualitative data from interviews with those who were principals during the period. This mixed-methods approach shows that both enrolment numbers and academic achievement in three of the four schools fell and then rose almost simultaneously with the removal in 1991 and then reinstatement in 2000 of geographic home zones. The ethnic and socioeconomic polarisation that resulted from the earlier change, however, has not reversed. The quantitative and qualitative data together provide clear evidence that geographic home zones provide a level of stability and security in the provision of education at a local level that is not matched by the alternative regulatory regime that operated in the 1990s.

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Chapter One: Introduction

In 1996, two Massey University researchers completed the first report for the ministry-initiated AIMHI project. The eight schools that were initially[1] invited to be a part of the project were decile one and had high ratios of Pacific Island and Maori students (Hawk & Hill, 1996). The purpose of the project was three-fold: to raise market share; to raise school and student performance[2]; and achieve sustainable, self-managing schools (ibid, executive summary). Identification and selection of these schools, therefore, implied that they were not successfully operating within the educational environment of the time. Hawk and Hill went a step further in describing the schools as on a "spiral of decline" (ibid) that they had little hope of breaking out of. They identified a number of influences that "disproportionately disadvantaged" the schools. The programme of policies launched seven years earlier under the banner of Tomorrow's Schools combined with demographic and socioeconomic changes meant that the schools were in a weak position to compete for students in the educational marketplace. Hawk and Hill claim that the removal of regulations for geographic enrolment zones, in particular, undermined their ability to compete. With an existing poor public profile, parents were given the freedom to exercise their choice in schooling. Rolls started to fall, staffing was consequently cut, academic programmes

[1] The project was finally expanded to nine schools.

[2] Four areas of performance were defined: student achievement; college governance and management; school/community relationships; and social services support policy. It was up to the schools to set their own targets within these areas (Hawk & Hill , 1996)

narrowed and it became more difficult for a school to generate positive publicity. Just as the marketplace rewarded success, it also reinforced failure. In the educational environment of the nineties, they contended, once a low decile school's roll started to decline it was "almost impossible to reverse the trend, regardless of the quality of leadership and governance" (ibid).

This study examines the impact that different regimes of enrolment regulation have had on student enrolments in a geographic space. It builds our understanding of the impact of zoning by presenting an in-depth, longitudinal analysis of one market context. This first chapter is an introduction to the ideas contained in this thesis, identifies the key research questions, discusses relevance of such a study, and outlines the contents of the chapters that follow.

There have been relatively few empirical studies of the New Zealand experience. We must look to overseas studies to provide a context. A number of New Zealand studies have identified a relationship between enrolment regulations and school enrolments, in particular drawing attention to the negative impact that the abandonment of 'home zones' has had on many lower decile and ethnically diverse schools. For example, work by Wylie (1997, 1999, 2006), Thrupp (1999), Lauder and Hughes (1999) and Fiske and Ladd (2000), while more broadly assessing the impact of the introduction of market forces in education, have made this point. While some of their findings have been challenged (for example Gorard and Fitz, 1998), these studies were part of an ongoing examination in the nineties of the efficacy of the reforms. The initial interest in educational restructuring was boosted internationally because New Zealand was leading

the way. Since the late nineties, interest has not been as intense, perhaps because other countries began their own programmes, or perhaps because New Zealand took a partial step back from the free market model when a new government took office in 1999. While many of the fundamental components remain (for example, formula funding, competition, and local governance) there have also been a range of government sponsored initiatives aimed at supporting struggling schools. Given that there is a lack of recent analysis of this aspect of the educational environment, and that a new government has just taken office with strong links to the neo-liberal agendas of the previous decade, now seems an opportune time to ask how schools have fared in the period since regulations around enrolment schemes were last modified. The issue of school zoning has also been raised recently in the media with the principals of a number of central Auckland high schools questioning the restrictions that the current regime places upon them (Smith, 2009). Given the number of responses in the accompanying blog on the Herald's website, zoning is certainly an issue that is never far from the public eye. There is further work to be done, however, to more clearly understand the impact that different regimes of zoning regulations have on schools. The degree to which zoning regulations have an impact on school enrolments remains a question open to challenge. While studies of the nineties indicate a correlation between changes in regulations and enrolment figures, an examination of the situation since then should provide additional evidence one way or the other. In addition to the impact on the size of a school, researchers have claimed impacts on school mix.

The aim of this study is to identify the impact that government policies related to enrolment schemes have had on student enrolment numbers in a single geographic

space. In this respect, the present study follows Taylor (2009) who argued that the impact of school choice policies will reflect local peculiarities and broader social and economic changes. Taylor (2009) stressed that it is unwise to sheet home all changes in the composition of schools to the introduction of school choice policies. The impact of school choice policies will, for example, depend in part on the number of schools within a given geographical catchment area (Butler et al., 2007; Taylor, 2009).

This is not an analysis of the efficacy of the market reforms as manifested in New Zealand, but does seek to contribute to a more complete understanding of how one aspect of the reform process impacted on schools. The study will focus on the progress of a group of secondary schools within a geographic area in New Zealand from before the introduction of Tomorrow's Schools in 1989 up to the present day, and will seek to establish whether there is evidence of a correlation between the zoning regulations of the day and their student intakes. Ethnic, gender and the socio-economic mix of the students enrolled in the schools within the competition space will also be examined. In the late 1980s, before the reforms of Tomorrow's Schools, one of the schools in this study had a roll of nearly 1,400 students[3]. By the mid-nineties it had just over 400 students. In 2000, the Education Amendment Act reestablished a prescriptive process for enrolment schemes and restored the concept of the geographic home zone. By 2009, the school's roll had grown to 714 students. Ozga notes that "if we maintain our interests in social justice concerns, we have to seek out and scrutinize the processes that ensure that the apparently neutral market works in particular ways, and we also need to ask why this should be so, and in whose interests it is happening" (Ozga, 2000, p. 60).

[3] Roll numbers have been altered to preserve the anonymity of the schools and related participants. This process is described in Chapter 3.

The potential of the market to reinforce inequalities and to shift responsibility from the state on to individuals can disguise polarisation of the provision of education in favour of middle class exploitation. To what extent can roll fluctuations such as those described above be attributed to zoning regulations? What other factors may have contributed? How did the other secondary schools in the area fare? This study seeks to extend understanding of the impacts so that, should there be a proposal to alter existing regulations, there is a greater depth of knowledge about the potential costs and benefits of alternative arrangements.

Previous studies have drawn the conclusion that inequalities have widened as a result of the implementation of the reforms, and that the abolition of zoning is a key component of these reforms. How important is zoning in determining a school's enrolments and enrolment pattern within a locality occupied by a number of schools? As it is likely to continue to occupy a place in public debate, greater knowledge of how it impacts on schools can only better inform that debate and possibly reveal potential consequences of the alternatives. Is there evidence since enrolment zones were reintroduced to further support these claims?

Zoning has always been the subject of intense national debate in New Zealand. Like any policy in this area zoning policy has to accommodate the principles of compulsory education, freedom of parental choice, a child's right to an education, and the best use of resources by the state provider. More often than not, these are conflicting rather than complementary. From its first appearance in the Education Amendment Act

1924 and through all subsequent forms and revisions up until 1989, the clear intent of regulations had been to restrict a parent's freedom of choice only in situations where there was overcrowding (Breakwell, 1999). The state's desire to make the best use of its considerable investment in schooling infrastructure has not only had to compete with parent choice, but also the desire by some schools to preserve their position and image in the community.

A key element to creating competition is the removal of any restriction on freedom of choice, in this instance, restrictions to enrolment in a school of choice. This is based on the assumption that that removal of geographic enrolment zones opens up the market, empowering consumers to select from the range of educational opportunities made available to them. Ironically, the way in which enrolments were regulated through the nineties handed the greater part of market power to schools rather than parents. Markets tend to create winners and losers, but in the quasi-markets of education the playing field was not level to begin with so the result has often been to magnify pre-existing inequalities, reinforcing and concentrating socio-economic and ethnic divisions (Lauder, et al., 1999; Levin, 1997; Wylie, 2006). While policy-makers have subsequently acknowledged that some problems faced by schools are beyond their ability to respond to within the bounds of the self-managing, formula-funded model and have introduced various support programmes mainly targeting low decile schools, the quasi-market model is still fundamentally intact and competition is still a feature in many parts of the country. Enrolment schemes are one means of conserving the state's existing network investment (Rishworth, Walsh, & Hannan, 2001) and reducing pressure on future capital spending. The restoration of geographic home zones and balloting has moved the balance of power away from schools. Right of enrolment in the

local school is protected, while parents still have the freedom to apply to enrol in any school of their choice. To broadly generalise, there is the period in the nineties when geographic zoning was abandoned, followed by the last nine years of its re-introduction. One of the aims of this study is to draw comparison between the two of the impacts on enrolments for specific schools.

This study will draw on quantitative data collected by the Ministry of Education and Statistics New Zealand, as well as interviews with the principals of the secondary schools within the case study area who were serving in the relevant period. The rest of this thesis is structured as follows:

Chapter Two provides the socio-political context to the study, the research setting within which it sits, outlines the theoretical basis for the market reforms, and describes the environment and process through which the reforms came about in New Zealand.

Chapter Three identifies the specific research questions that frame this study, discusses the rationale for using a mixed research methodology, and describes the specific methodologies adopted. This is followed by details of both the data sought and the data retrieved follows, and the analytical decisions subsequently made.

Chapter Four presents an analysis of the quantitative data on enrolment and achievement for schools in the competition space. Specifically, patterns of total enrolments and of Year Nine enrolments are examined for the period 1984 to 2009 with the data disaggregated by ethnicity and sex. 'Catchment' schools for each of the secondary schools are identified and

subjected to the same analysis. Patterns of achievement in external qualifications from 1992 to 2009 are then identified.

Chapter Five provides the demographic and socioeconomic data for the locality within which the patterns identified in the previous chapter are set.

Chapter Six considers the evidence provided by interviews with secondary principals of the era. Their responses are grouped by theme as they reflect on the forces and events that impacted on their schools in the time that they led their respective schools.

Chapter Seven addresses the research questions raised in this thesis and draws conclusions in respect of those questions.

Chapter Two: Background

This chapter provides background information for this study, it details the context in which the study is situated, and it proves a basis for the research questions which are detailed in a subsequent chapter. The neo-liberal rationale for the reforms in education, focusing particularly on the contribution of public choice theory will be examined. First to be discussed is the historical context within which the Tomorrow's Schools reforms occurred. Second, the theoretical underpinnings of the Tomorrow's Schools reforms in which the question of what constitutes a quasi-market in education and how it differs from a conventional market will be considered. This will be followed by a description of the various regulatory regimes for school zoning and enrolment that have been in place since 1989, and finally, a review of research into the impacts of the reforms.

1. Historical Setting

Revolution is a term that has been used by some historians to characterise the neo-liberal reforms started by New Zealand's third Labour government of the mid 1980s and carried on through the mid 1990s by the National regime that followed (Belich, 2001; Mein-Smith, 2005). Initially this revolution focused on the economy. Substantial parts of the government were corporatised, what remained underwent major operational reform, and a programme of deregulation of the private sector was undertaken. For

many of the newly created state-owned enterprises, privatisation was to follow, for example postal and banking services, railways, and forestry.

Upon re-election in 1987, the Labour government turned its attention to rewriting the social contract between the government and the people of New Zealand. Education, along with health and welfare, became subject to a similar reform programme. The concept of private cost and benefit was given greater priority while external spillovers (public or communal costs and benefits) were disparaged for contributing to the widespread inefficiencies that were said to be the national malaise. The concept of the market was held up as the panacea for this malaise; the operating model that needed to be emulated and reproduced across nearly all sectors of New Zealand society. Like any revolution, the economic and social upheaval was considerable.

For education, the first steps by the government in this revolutionary process were announced with the publication of the Picot Report (1988)[4] and the subsequent development by the government of the initiative launched under the title *Tomorrow's Schools*. The resultant Education Act 1989 heralded a major change in the nature of the relationships schools had with parents and with each other. Up to this point, schooling had operated under a highly centralised system in which the Department of Education made almost all policy, resourcing and curriculum decisions and there was little, if any, direct input by parents into the schools they sent their children to. The intent was to maintain a system of schooling that was reasonably uniform across the country and provided similar opportunities for everyone (Gordon, 1996). Obviously the reality was somewhat different. Criticism from the Left focussed on the structural preservation of privilege while the Right-wing maintained that such a bureaucratic system was

[4] This is the public title given to the report of the Taskforce to Review Education Administration lead by Bian Picot. The report's formal title is 'Administering for Excellence: Effective Administration in Education'.

unresponsive to individual needs (McCulloch, 1991). The new regime abolished the network of regional Education Boards, transferred responsibility for many functions to individual schools, and transformed the Department into a new Ministry of Education whose principal role was largely reduced to that of policy provider. In the rhetoric of the time, schools would effectively become corporatized: educational mini-businesses with newly established boards of trustees were given greater autonomy over their budgets and staffing and would be expected to compete for students. Thus, new quasi-markets in education were legislated for wherein schools would compete with other schools in an 'open market'. Government regulations around the provision of education had to be reviewed, revised and/or removed, especially where they came into conflict with this new market ethos. With such broad-ranging changes to the administrative structures across the entire education sector, it was inevitable that there would be implications for school enrolments. In fact, the freedom to choose offered to families by an unfettered market was eagerly anticipated by reform advocates as the mechanism by which schools would be forced to improve their policies and practices. Enrolment regulations that inhibited choice were abandoned altogether in an early iteration of the reforms.

Developments in New Zealand mirrored those taking place in other countries. Internationally, neo-liberal philosophies and the microeconomic imperatives of efficiency and profitability dominated the discourse (Fitzsimons, Peters, & Roberts, 1999). The neo-liberalism of the time promoted monetarism, human capital theory and public choice theory, in what Codd (1999) calls "economic rationalism" and Sandel (2009) "market triumphalism". Lyotard (as cited in Fitzsimons *et al*) argues that economics had become a "meta-narrative" whereby resource efficiency had taken over from welfare as the defining context for public policy discourse. As Ridenour (2001)

commented, there was a "shift from public policy based on democratic principles to a public policy based on market assumptions" (p67). It was within this environment that the case for the marketisation of education was developed and enacted in New Zealand and elsewhere in the world.

Public choice theory was a key component with its underlying assumption that self-interest is the primary motivating factor behind all individuals' behaviour (Fitzsimons, et al., 1999; Lubienski, 2006). Furthermore it theorizes that all social phenomena are merely an aggregation of these individual behaviours. This means, it is then argued, that the 'common good' is nothing more than the totality of individuals subjectively looking out for themselves (Codd, 1999; Feldman, 2008). In other words, the 'common good' is a mask for private gain by those with the opportunity to promote their own interests. This provides the basis of two of the main criticisms of the old system: provider capture and the inherent inefficiency of the state sector. Government provision of goods and services will always be subject to provider capture as state sector agents act in their own rather than their 'clients' best interests (Adnett & Davies, 1999; Fitzsimons, et al., 1999; Lubienski, 2006). Treasury was quite explicit in its advocacy of this view in its briefings following the 1984 and 1987 elections (Codd, 1999). The necessary corollary to this was to minimize the decision-making power held by state institutions and their proxies through a system that involved limited discretion and separation of duties. At the national level this saw the reduction of the Department of Education to a ministry with a policy focus and the creation of four new agencies – the Education Review Office, New Zealand Qualifications Authority, Special Education Service, Colleges of Education – with distinct roles (Gordon, 1996). These moves

separated policy from operations and introduced elements of contestability aimed at both improving responsiveness to consumer demand and efficiency.

According to the theory, contestability was also required at the local level with the expectation that schools would compete separately rather than cooperate collectively to provide educational services and families would be granted the freedom to choose where their children were educated. In theory, the problem of provider capture would be addressed through empowerment of parents and communities. While locally elected boards of trustees would be handed control[5] of schools, parents would be given the ability to choose the most appropriate school for their child. Levačić (2001), commenting on similar initiatives in England, noted that this

> "*…advocacy of parental choice of state school is made on two main grounds. The first being the principle of freedom of choice and the second, the argument that competition between schools as producers of educational outputs results in better performance by schools.*" (p3)

Accordingly, as individuals always acted out of self-interest (and in this case those individuals were school leaders and administrators), then setting them the right types of incentives would lead to better outcomes across the education sector. Given the nature of a largely state-provided system of schooling where prices and profits did not exist, substitute incentives would have to be found that mirrored those of the marketplace. Consequently, the governance structures in education would also have to change to more closely resemble those of the marketplace. This "injection of market principles" (Ozga, 2000, p. 59) created quasi-markets in education and was based on the assumptions that competition would raise efficiency, choice is morally good, the market

[5] While given responsibility for governing schools, in reality school boards and principals have only operational autonomy. See Gordon (1996), Wylie (1997), Fiske and Ladd (2000) for further discussion of this.

is more efficient and more fair than the welfare state, and inequality is a natural part of society that cannot be overcome by intervention. The next section examines the concept of the 'quasi-market' and analyses the theory behind their operation in an educational context.

2. Market Theory

One of the first to explore the nature of the quasi-market in education was Julian Le Grand (1991). He noted its introduction to Britain with the passing of the Education Reform Act 1988 and observed that it had four essential features: open enrolment, formula funding (based on student numbers), local management, and the ability of schools to opt out of local authority control. The first three of these were shared with the reforms undertaken in New Zealand These new structures resembled those found in 'markets' in that they aimed to replace the centralised state monopoly with competition. In practice, however, the markets created are best considered as 'quasi' as they differ from standard markets in some quite significant ways.

Neo-classical market theory states that price signals and the profit motive provide the mechanisms by which resources will be allocated in the best interests of society. The emphasis is on maximising behaviour for both sides of the market (Sent, 2008). The fundamental assumption of rationality requires both buyers and sellers to seek to maximise their own benefits (utility and profits respectively), thereby achieving an optimal outcome for society. Allocative efficiency, wherein resources are best used to meet consumer needs and wants, can only be met through the unfettered market mechanism (Baumol & Blinder, 1982; Samuelson, Hancock, & Wallace, 1975). This

concept of 'allocative efficiency' via the market is predicated on the existence of perfect competition in the marketplace, which in turn requires several conditions be met: consumer sovereignty, perfect knowledge, perfect resource mobility, and the non-existence of externalities or public goods (ibid). If these conditions are not all met then allocative efficiency is not achieved and the market is said to have failed; that is, the market fails to fully deliver to society the promised benefits because price signals and the profit motive are not able to operate as they should. The expectation then is that the government will intervene to achieve the outcome that a competitive market would produce if it were able. This is what Sandel (2009) calls "market mimicking governance". A common manifestation of such governance is the regulation of anti-competitive behaviours: an acknowledgement that in many markets, perfect competition does not exist and the balance of power in the marketplace is weighted against consumers.

Consumer sovereignty requires that the consumer – in this case parent and student – has the fundamental right to make their own decisions. Thus, the consumer has considerable power in influencing what will be produced through their purchasing preferences. In a free market for education, schools would have to respond to the wishes of parents and the needs of students or they would not attract the numbers to continue to operate. At the same time resources would be more efficiently allocated within the school system not only by providing the type of education that consumers (parents) want, but also because through the process of competing, schools would work harder with the resources they have. Sovereignty implies that consumers are able to exercise choice, which in turn implies that there exists a range of viable options from which to choose and an ability to act on that choice once it has been made. As the needs and

wants of parents and their children are likely to be multifarious different schools would appeal for different reasons and diversity in supply would be encouraged rather than the 'one size fits all' model of centralised state control. Sovereignty therefore both promotes the concept of parental rights and encourages diversity in schooling.

The model adopted in New Zealand combined centralised funding of schools based on student numbers and the abolition of geographic zoning. The idea was to empower parents by giving them the freedom to take their funding (along with their child) elsewhere. Dale and Ozga (1993) have called this an 'exit' model whereby those unhappy with a particular school simply opt out and move on. This is in contrast with what they call the 'voice' model which requires the disaffected to complain or criticize to affect change from within.

When moving away from the highly centralised system of pre-1989, policy makers faced a paradox. On the one hand, they were tied to the principle of compulsory education which placed a responsibility on government to provide funding and ensure quality. On the other, the neo-liberal principle of freedom of choice, which in turn implied non-intervention by government and the primacy of market forces. The result was the creation of quasi-markets. Wherever these quasi-markets have been created, whether New Zealand, Britain, the United States or beyond, they differ from classical market theory on both the demand-side and the supply-side as well as in the mechanisms by which they interact (Brown, 1997; Le Grand, 1991; Lubienski, 2006; Merrifield, 2009; Walford, 1996).

3. Market Theory versus Education Reality

Consumer demand in education varies from the theory in several fundamental ways. The legal requirement to 'consume' education creates stability in demand that is not present in ordinary markets (Merrifield, 2009), and for some families the dynamic may be one of obligation rather than aspiration (Lubienski, 2006). The usual role for a consumer is to select, pay for and then gain utility from a commodity. In education, however, there is often a separation of duties so that parents choose, the government pays, and children partake, each with their own reasons for participation and goals (Le Grand, 1991; Lubienski, 2006; Walford, 1996). Given the wider social benefits that education accrues, it could be argued that there are multiple beneficiaries and so multiple consumers. This opens the transaction to a potential conflict – whose rights are paramount? Given that the act of choosing often only happens at the beginning of each level of schooling, the stakes are further elevated by the practical difficulties of changing between alternatives (Wylie, 1998) and the unpredictability of the outcomes (Brown, 1997; Walford, 1996). Additionally, the extent to which consumer behaviour is rational has been called into question (Adnett & Davies, 1999; Bell, 2009; Le Grand, 1991; Levin, 1997) and is discussed later in the chapter.

The supply side of the market also fails to conform to market norms. Although reform was intended to break down state monopoly control, the entry and operation of providers is closely regulated (Levačić, 2001; Walford, 1996). There is also a mix of public and private providers, rather more of the former in the case of New Zealand than is the case overseas (Gordon, 1996; Walford, 1996). Government provision tends to remove (or at least greatly reduce) any credible threat of closure given the financial costs and risks to those students who remain in a 'failing' school (Adnett & Davies,

1999; Wylie, 1998). This additionally means that, in most instances, profit is not a motivating factor on the supply side. This has significant implications for the operation of the market. If competitors are not seeking to maximize profits and ownership is separated from governance (as is the case amongst state schools) then what precisely will schools be seeking to maximize, and for whom (Le Grand, 1991)? The chief beneficiaries of education are also education's most significant input. The incentives that do operate within the market encourage schools to minimise their numbers of more 'costly' students[6] as addressing their needs "is a philanthropic, not market, impulse" (Lubienski, 2006, p. 337). As Walford (1996) points out, when it comes to schooling, the act of choosing itself transforms the product and reduces the ability of a failing school to change.

There are further deviations from the theory of a perfectly competitive market both in the mechanisms operating within an education market and in the nature of education as a traded commodity. Despite ideological skirmishes around the fringes, education is generally accepted as a mixed good with demonstrable social and private benefits accruing from both consumption and production (Adnett & Davies, 1999; Levačić, 2001; Levin, 1997; Lubienski, 2006), although some are rather loose with their use of economic terms (Ridenour, et al., 2001). It is this categorisation that governments use to justify regulation not just of suppliers, as noted above, but also of the commodity itself (Adnett & Davies, 1999; Brown, 1997; Lubienski, 2006). Adnett and Davies (1999) further point out that the inherent difficulty in identifying and measuring the social (output) benefits of education leads policy-makers to the more easily measurable inputs available through a focus on production efficiency. Hence the nature of the

[6] More costly students would include those with behavioural, learning or other needs that require additional resources.

contract between buyer (whether student, parent or government) and seller (school) is defined in terms of inputs (curriculum content, resourcing, staffing) rather than the more usual outputs (Brown, 1997; Le Grand, 1991). Asymmetries in information, particularly in relation to what researchers have labelled the "black box" of educational processes further distorts the operation of the market (Adnett & Davies, 1999; Bell, 2009; Kelly, 2010; Levin, 1997; Lubienski, 2006).

The cumulative affect of all of this means that any market for schooling will vary significantly from the ideal of perfect competition (a rarely seen phenomenon under any circumstances) and has rather more in common with localised oligopolistic markets; a few providers offering a similar though not identical product, barriers to entry/exit, and a high degree of interdependence between rivals that is likely to lead to collusion or other behaviours that do not necessarily coincide with the interests of consumers. This is precisely what has been found in studies of competition in the English school system such as that of Davies, Adnett and Mangan (2002) amongst others.

While the features of the market for schooling do not line up with the classical theory, Walford (1996) argues that there are similarities in some of the effects. Product differentiation develops as consumers begin to perceive a "hierarchy of desirability" for schools. Unless otherwise controlled, there will be a reduction in the number and an increase in the size of schools as parents act on their preferences. This parallels Taylor's (2001) hierarchies, Bell's (2009) choice sets and the circuits of schooling model developed by Ball, Bowe and Gewirtz (1995) that are discussed later in this chapter. There will be winners and losers apparent on both sides of the market but, as with other products, those with cultural and financial capital have a greater capacity to win. Further to all of the above, critical attention has been drawn to the practical deficiencies of

many of the claims made for the education sector by those advocating the application of market theory.

Existing inequalities and inequities were predicted by early commentators (Lauder, 1987; Le Grand, 1991; McCulloch, 1991) to be perpetuated just as they are in conventional markets, with selective schools 'skimming the cream' while others sink. The findings of the research that followed and the debates it sparked are the subject of the last section in this chapter.

The philosophical basis of choice in schooling has been explored at length by a range of commentators and researchers. The right to choose is primarily focused on maximising the private benefits of education such as knowledge and personal well-being that enhance earning potential, health, consumption, and social status. Levin draws attention to a competing right, that of the democratic society as it seeks "to reproduce its most essential political, economic, and social institutions through a common schooling experience" (1997, pp. 27-28). Schools are expected to provide opportunities for all without favour, to contribute to the development of its citizens, to promote economic growth and full employment, and to provide a foundation for cultural and scientific progress. These "competing rights" provide a dilemma for those responsible for developing and enacting educational policy as noted earlier in the chapter.

Consumer sovereignty, the right to choose, is a requirement of allocative efficiency and is only realistically available to some due to location, income or some other factor. The competitive gains to be made in x-efficiency[7] and allocative efficiency, similarly, are far from guaranteed in education. Many conventional markets

[7] X-efficiency is essentially the difference between what a firm could and what a firm does produce with a given set of inputs, and is more fully explained in Leibenstein (2008).

fail to achieve x-efficiencies despite clear market incentives, so there seems little reason to expect they would be achieved in a market where provider objectives are not profit oriented (Le Grand, 1991; Leibenstein, 2008). Although it is predicted that costs could be reduced, this may not be the case as, for example, there is a shift away from a monopsonistic structure in the labour market where the state is the (almost) sole purchaser of teaching services.

"The term 'competition' is often implicitly assumed to be a self-evident concept" (Levačić, 2001, p. 6), as are the efficiencies competition is supposed to achieve. This has led to an operational definition of the concept adopted by many researchers in this area that does not separate behaviour from structure and a resulting assumption (by both researchers and policy-makers) that if there are a number of schools serving a locality, they will be competitive and thus performance will rise. Merrifield (2009) warns that rivalry and competition should not be confused – more is required to create a market than multiple providers and an element of choice.

4. Regulatory History of Enrolment Zones

The legislative framework around school enrolments in New Zealand and the corresponding actions of parents, schools and government has been well mapped out by a number of commentators (Breakwell, 1999; Gordon, 2006; LaRoque, 2005; McCulloch, 1991; Pearce & Gordon, 2005; Rishworth, et al., 2001). Prior to 1989, government regulations around zoning were predicated on the right of attendance at a "reasonably convenient" school. The Secretary for Education retained tight control of the process, determining zones based in geographical areas that took into account

student populations, local school networks and resources, and historical patterns. Demographic changes, the opening of new schools in some areas and the increasing tension between competing political ideologies during the eighties saw this system face not only growing criticism but also litigation. The rise of the New Right pushed to the fore themes such as consumer sovereignty and the benefits of competition which, to some in the public domain, provided sufficient grounds to challenge the existing enrolment system through the courts. From the opposite side of the political spectrum, a growing perception of institutionalised inequities prompted calls to strengthen school zoning as a mechanism for raising social justice.

When the Picot task force reported back to government, they advocated for the absolute right for students to attend their nearest local school and, in the event that a school was oversubscribed, balloting of applicants. They could otherwise see little merit in retaining a system where enrolment zones were used to support flagging schools. The subsequently established Enrolment Policy Working Group further developed and refined this set of principles that then became the basis of the legislation introduced in 1989 and implemented in 1990 adding that best use of the existing network of schools was also to be a factor taken into consideration. The necessary corollary of this allowed over-subscribed schools to establish home zones and ballot out-of-zone students if places were available. A year later, the incoming National government passed the Education Amendment Act of 1991 which attempted to further deregulate the market for schooling.

Under the new Act, responsibility for devising and implementing enrolment schemes was devolved to individual schools. Once a ‘threat’ of overcrowding had been established a school was free to determine the content and form of the scheme by which

enrolments would be undertaken. The right to attend one's local school was abolished and the only restriction placed on schools was compliance with human rights legislation. In the seven years that followed there was significant growth in the number of enrolment schemes. While 70 schools operated schemes in early 1992, this had grown to 422 by the end of 1997 (Rishworth, et al., 2001). Seventy-seven of these were without a nominated geographic zone and/or had non-residential criteria determining the selection of students. An amendment in 1998 reintroduced the concept of attendance at a 'reasonably convenient' school, required schools to consult their community when formulating or changing an enrolment scheme, and empowered the Secretary for Education to set guidelines for school boards. In all other respects, it was business as usual.

Following the election of a Labour-led government in 1999, discretion over the process and content of enrolment schemes was returned to centralised control. This was in response to a situation, prevalent but not restricted to Auckland, in which children were found to be travelling some distance before finding a school that would accept them (Fiske & Ladd, 2000; Pearce & Gordon, 2005). Geographic 'home zones' were once again introduced as part of a prescriptive process that laid out statutory requirements and transferred control of the process back to the Secretary for Education. The right of students to attend their local school was restored as was balloting of 'excess' out-of-zone students. Aside from some technical amendments, this regime is the one within which schools have operated since 2001. At the end of 2007, 655 schools had enrolment schemes in place of which 128 were secondary schools (*New Zealand Schools: Nga Kura o Aotearoa (2008): A Report on the Compulsory Schools Sector in New Zealand 2008*, 2009).

5. School Choice Debate/Research

Within the field of sociology of education, the issue of school choice as been fertile ground for debate. In New Zealand, the debate has been part of a wider examination of the neo-liberal reforms of education that began with Tomorrow's Schools. Domestic and international interest in the New Zealand experience peaked around the end of last century as the results and analyses of longitudinal studies began to surface (Fiske & Ladd, 2000; Lauder, et al., 1999; Wylie, 1999, 2006). An overview of the processes of school choice provides both a useful context and assists in understanding the data that is examined in the following chapters.

Much of the debate around school choice is centred on political and socio-economic rather than educational imperatives. Gorard (1999) surveyed school choice research, suggesting that initially the research focus was on identifying the criteria used by families when selecting a school, then broadened to an examination of the processes by which choice is made – who makes the choice, when and how. Studies usually aggregated their results into categories from which Gorard synthesized six key factors. Safety and welfare, academic outcomes, school resources (for example, range of subjects and quality of classrooms), school style (read traditional), small school/class size, and extra-curricular activities comprised the chief determinants of school choice, though the significance of each depends upon whether it was the child or the parent who was doing the choosing. Research seems to be divided on whether it is parent or child that has more say. Information sources vary from open days, interviews, prospectuses, league tables, and anecdotal evidence. In a more recent over-view of research from the United Kingdom, United States and Europe Kelly (2010) notes that while findings on the impacts of school choice are frequently contradictory and therefore inconclusive,

there is clear evidence of a distinction based on socio-economic factors between those who actively choose schools and those who are more passive. The impetus for this largely relates to fear of one's children moving down the social ladder. However, rather that simply a middle class phenomenon, Kelly finds that it applies to "aspirational" parents and contends that the research shows that choice policies provide an advantage for those who are active and risk-aware.

As the Tomorrow's Schools reforms bedded in, researchers became interested in the impacts of increased choice. This merged with research into school mix, school effectiveness and broader sociological debates around equity of educational access and outcomes. It is in this area that the four studies mentioned above fall.

The Smithfield Project (Lauder, et al., 1999) was the first longitudinal study of the effects of the reforms on school performance in New Zealand. Beginning in 1992 the project tracked the progress of twenty-three mainly urban secondary schools over five years. The project is the most ambitious of its kind to date in New Zealand, collecting data via several rounds of surveys, questionnaires and interviews of students, parents and principals, attendance and achievement records, and classroom observations. Its intention, in the researchers' own words, was "…to test the claims of those who champion markets" (p2) in education. From their findings they drew three significant and interrelated conclusions; first, that the 'choice process' was weighted in favour of middle class and pakeha parents. Their evidence supported the adoption of the model developed by Ball, Bowe and Gewirtz (Ball, et al., 1995) of 'circuits' of schools that have the effect of narrowing parents perceptions of the number of schools from which they could realistically choose. Middle class parents would set their sights on high circuit schools, while working class parents would (if they exercised their right to

choose) focus primarily on selecting from lower circuit schools. Over-subscribed schools also had a role to play in that their selection processes often used "social class and ethnicity as a proxy for ability" (p133) in their efforts to preserve their competitive advantage. This, in turn, relates to the second of their conclusions; that, rather than becoming more homogenous as market proponents predicted, schools were becoming increasingly polarized along socio-economic and ethnic divisions. Their results indicated that this polarization within the school populations was more significant than residential demographic patterns. Third, that the cumulative effect of the first two would have an impact on a school's performance. Those schools with a higher concentration of Maori or Pacific Island students, and/or with a lower socio-economic profile were likely to perform less well in national assessments. Additionally, these schools would also experience a greater degree of roll instability which was also found to impact on performance. Overall, Lauder et al argued that the weight of their evidence pointed to the failure of the market model to fulfil the promises of its advocates, and in some aspects exacerbated problems that advocates claimed it would alleviate.

Wylie's most recent analysis (2006) updated her findings from surveys of schools conducted in 1996 and 1998 with new evidence from 2003 surveys undertaken by the New Zealand Council for Educational Research. She assesses the nature of school choice and the extent and impact of competition between schools. While finding that the majority of students were attending their school of first choice (and that this had improved since 1999), a break down of the numbers of those who were not showed that greater representation from amongst low socio-economic groups had persisted. Over-representation by Maori was no longer evident in 2003. Wylie cites other small scale New Zealand studies where similar results suggest that there is a socio-economic factor

in successfully deploying the option to choose schooling, particularly in areas where high and low income areas are adjacent to one another. Attendance at one's school of first choice bore little relationship to parental satisfaction, student engagement or achievement[8]. Enrolment schemes are identified as the main reason for students not attending their school of first choice (as opposed to cost or transport for example) which Wylie attributes to the growth in the number of schemes in place, particularly since 2000[9]. She also notes a direct correlation between the proportion of schemes operating and the decile ranking of schools: nearly half decile ten schools have enrolment schemes in place.

According to Wylie's findings, competition between schools was not prevalent in all parts of the country, however in the schools where principals perceived competition to exist there was a positive correlation with roll instability. No evidence was found that competition led to improved academic achievement. She concluded that competition had not brought about positive change, a stance not only supported by her own findings but also evidenced by the increasingly interventionist role that government had taken in education since 1995[10].

The most comprehensive examination of the Tomorrow's Schools reforms from researchers from outside of New Zealand came from Americans Edward Fiske and Helen Ladd (2000). The pair spent five months in the country in 1998, undertaking a review of the literature, data from the Ministry of Education, the research coming out of the Smithfield Project and NZCER (Cathy Wylie), visits to schools and interviews with

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[8] Wylie makes the point that parental satisfaction with the quality of schooling in New Zealand has been high (85%+) and consistently so since before the reform process began in 1989.

[9] Between 1999 and 2004 secondary school schemes increased in number by 31, from 15 % to nearly 25% of schools. In primary schools, the numbers rose from 161 to 344, eighteen percent of schools.

[10] Interventions included a funding formula based on decile ranking, targeted professional development, and support of professional learning communities (Wylie 2006)

school leaders and policy makers. While their findings were generally in agreement with Lauder et al and Wylie, they were also more moderate in their conclusions.

Fiske and Ladd observed that the reforms had served the needs of some types of students better than others. The availability of choice and the advent of competition had intensified rather than mitigated existing inequalities, with ethnic minorities and disadvantaged students disproportionately represented in struggling schools. By 1998, even policy-makers admitted to estimates that between 10 and 30% of schools would require more than incentives to succeed in the competitive environment. These numbers made apparent to the Ministry the economic and political costs of leaving schools to sink or swim unaided. The budgetary implications of catering for roll growth in successful schools while facilities lay underutilised close by put resource efficiency into direct conflict with the philosophy of free parent choice. It did not take long before financial imperatives held sway and schools were empowered to restrict enrolments. Community reaction to the possibility of local school closures also forced a rethink. Despite the devolution of governance to the local community, the public expectation persisted that responsibility for education still fundamentally lay with central government and thus the problem of failing schools was theirs to deal with.

In their final assessment of the efficacy of the Tomorrow's Schools, Fiske and Ladd identified three key questions around which lessons could be learned – and by implication had not been adequately thought through by the architects of New Zealand's reforms. First, how could polarisation along ethnic and socioeconomic divisions be ameliorated rather than intensified? Second, given that markets create both winners and losers, how can the costs to students in unsuccessful schools be reduced without compromising the gains made by those in successful schools? Lastly, what can be done

to balance the competing interests of the various stakeholders in schools and in education? As they pointed out, "the interests of…parents of current students…[took] precedence over the interests of other stakeholders and over the interests of the system as a whole" (p280).

Building on the work in these earlier studies, this thesis frames four research questions. What is the overall pattern of enrolments in four secondary schools within a particular competition space? Do the student cohorts these schools enrol become increasingly polarised along ethnic, sex, and/or socioeconomic lines? Is there any detectable connection between these enrolment patterns and the academic performance of the four schools? Lastly, is there evidence that changes in enrolment patterns might be attributable to changes in the legislation around school choice? Evidence is sought for the first two of these questions in the quantitative enrolment data collected by the Ministry of Education and census data from Statistics New Zealand. Assessment data from NZQA addresses the third question. Qualitative data from interviews with current and former principals of the schools in question is then added to the quantitative analysis to provide a comprehensive picture in response to the fourth question. The next chapter sets out the methodological approach for the research undertaken by this thesis.

Chapter Three: Method

Research Aim and Research Questions

This study explores the impact that different regimes of enrolment regulations have had on student enrolment numbers in a group of selected secondary schools. It seeks answers to four main questions. First, what is the overall pattern of enrolments in secondary schools within the particular competition space over time? Second, have the four secondary schools in this space become increasingly polarised in terms of the ethnicities, sex, and/or socioeconomic status of the students they enroll? Third, can any connection between enrolment patterns and the academic performance of the four schools in the market be detected? Fourth, is it possible to detect any impact of changes in enrolment patterns that might be attributable to changes in school choice legislation? Secondary questions within each of these main questions are as follows:

1. Enrolments Patterns:
    - What is the general pattern of enrolments within the locality?
    - What are the patterns of Year 9 enrolment numbers in the selected secondary schools?
    - What corresponding patterns there in enrolments in the contributing primary and intermediate schools?

2. Polarisation:
    - What variations in ethnicity, sex, or socioeconomic status are there in enrolments?
    - What variations in ethnicity, sex, or socioeconomic status are there in Year 9 enrolments in each school?
    - What are the corresponding patterns in enrolments in the contributing primary and intermediate schools?
3. Academic Performance:
    - What are the patterns of academic achievement in external qualifications within each of the secondary schools?
4. Attribution
    - What are the patterns of demographic change within the competition space?
    - What perceptions are held by the schools' principals at the time of the changes in enrolments, their impacts and their causes? How did schools and principals respond to the changing circumstances?

Two distinct periods are examined: in simple terms, the nineties featured open enrolment with no absolute right to attend the local school; since 2000, home zones have restored the right to attend a neighbourhood school while retaining the choice to apply for enrolment elsewhere (Breakwell 1999, Rishworth 2001).

Research Design

As described above, to better understand the impact that enrolment regulations have had on schools a combination of quantitative and qualitative approaches have been used to provide a more complete picture. The research design draws upon data gathered over many years and employs a pragmatic approach to data collection and analysis. Johnson and Christensen (2008) describe the pragmatist philosophy as one in which "the researcher mixes research components in any way [that] will work for the given research problem" (p. 442). By placing primary importance upon the research question, pragmatism acknowledges the value of both objective and subjective knowledge and treats the 'method' as a practical rather than philosophical issue (Creswell & Clark, 2007). For this study, a quantitative approach alone would not be sufficient of itself to satisfactorily answer the research questions. Qualitative data can provide insights into the mechanisms at work and the experiences of the institutions and individuals who were involved over the twenty years under review.

The statistical strengths of quantitative analysis are used to identify patterns and trends in school enrolments, changes in the ethnic and socio-economic profiles of the schools and community, and identify the strength and direction of any relevant correlations. Data on schools from the Ministry of Education and demographic data from Statistics New Zealand comprise the core of the quantitative data collection. While this provides independent and verifiable data of the externally apparent impacts on schools, it does not offer an insight into what was occurring within the schools at the time, nor are non-demographic factors of change identifiable. Interviews with those who were principals during the period, were undertaken to seek out qualitative data of this type. The information from these key participants is then triangulated with the

quantitative analysis. While these latter two sources are not necessarily objective and generalisable beyond the bounds of the study, they give an insight into the experiences and perspectives of these schools and communities during the period under scrutiny.

This mixed methods strategy aims to exploit the best of both approaches in order that the study will be stronger than either quantitative or qualitative research alone (Johnson & Christensen 2008, Creswell 2009). Triangulation of the qualitative and quantitative data provides a more complete understanding of the factors that have contributed to enrolment fluctuations for these schools since the advent of the reforms in 1989 by revealing points of convergence and divergence. The strategy does have its limitations, however. Great care has been taken in comparing and analysing the results from the two different methods, and in resolving any discrepancies that may arise.

Procedures

Case Study Description:

The setting for this study is an urban centre in New Zealand that is renamed Denton for the purposes of this study. The area was selected to fulfill a number of criteria. First was the existence of an easily defined 'education market' where there were a number of neighbouring secondary schools. Denton has four coeducational state secondary schools operating in relatively close proximity, in addition to an integrated school and a private school. Second, there are clearly defined geographic boundaries that separate Denton from adjacent urban areas and although public transport links do not encourage enrolment at secondary schools outside of the area, more distant schools do provide educational alternatives (such as single-sex schooling) that are not otherwise available. Third, the demographic profile of the

area also makes Denton an interesting area on which to focus an investigation. Although 2006 census data (Statistics New Zealand) shows that it is fairly typical of the wider region in many indicators, within Denton there exists a significantly wider spread of socio-economic conditions and a proportionately greater representation of minority ethnic groups creating the social conditions that earlier New Zealand researchers claimed would lead to intensified inequalities. These, then, are the conditions within which their claims could be tested.

In addition to the above, the area creates a study of a manageable size. While a larger study of a range of localities around the New Zealand would provide a greater weight of evidence, this is beyond the time and financial resources available to this researcher.

The Data Sought:

In brief, the research involved collecting enrolment data on the target schools to compare with trends for the contributing primary and intermediate schools in the area, for 'competing' secondary schools from outside of the area, and with demographic data of the resident population including gender, ethnic, and socio-economic status. Interviews with principals of the era and other documentary evidence would also be sought.

School Enrolment Data:

The Ministry of Education was approached for data relating to the March 1st and July 1st roll returns for both the target schools, all the primary and intermediate schools in the area, and a list of secondary schools beyond Denton that were likely

to draw students from the area. This list of other schools comprised both state and private, co-educational and single sex schools within the wider region to which students could travel on a daily basis. Beyond these, designated character and integrated schools in the wider region and beyond were excluded from the list as enrolment in these schools involved very small numbers and for whom enrolment regulations were likely to be a minor consideration. A request was also made for school decile rankings.

The specific information sought from the March 1st roll return (RS40) included the number of regular students by gender, year of schooling, type of school, type of student and nature of attendance (full-time and part-time). In addition data on secondary leavers by highest attainment and year of schooling was requested. The March 1st return also provided statistics on the previous school attended by enrolling students. The July 1st roll return (RS43) records similar data on student numbers with the addition of age and ethnicity. Although the period under review begins with the 1989 reforms, enrolment data back to 1983 was sought in order to formulate a baseline "pre-test" picture of the schools. The data for Year 9 enrolments is of greatest relevance as this is when a more explicit 'choice' about secondary schooling is enacted. Later changes in the school attended are generally due to a variety of reasons that are not relevant to this study[11]. From the end of the nineties an increasing number of schools submitted their data electronically, and now the whole process is completed via the computer driven student management system (SMS) of each school.

[11] Examples would range from a change of residence through to exclusion or expulsion from a school.

Achievement Data:

The New Zealand Qualifications Authority (NZQA) was approached for national and school achievement data from 1984 through to 2009. Data for the first level of national assessment – initially School Certificate and then National Certificate of Educational Achievement (NCEA) Level One – were sought as the most reliable indicators of achievement given that student participation is almost universal. Data was also requested on University Bursary and NCEA Level Three as the qualification assessed in the last year of secondary school.

Demographic Data of the Locality:

Census data for 2006, 2001, 1996, 1991 and 1986 was sought from Statistics New Zealand that would provide age, ethnicity, and socioeconomic indicators. Data from the last three censuses was downloaded from their website (www.stats.govt.nz/Census.aspx) and data for 1991 and 1986 was requested directly from Statistics New Zealand. The Index of Deprivation compiled by Otago University's Department of Public Health is based on census data and provides a comparable measure to the Ministry of Education's decile rankings. The index aggregates nine indicators into a measure of deprivation for small areas based on census meshblocks. This resource was downloaded from www.uow.otago.ac.nz/academic/dph/research/socioeconomicdeprivation.html.

Interview Data:

As key participants, principals of the secondary schools from the era under study were sought out for interviews. Their insights, experiences and perspectives on the contributing factors, the impacts on their schools and communities, and the consequences of changing enrolment conditions could provide valuable additional evidence. A list was compiled of those who were serving as principals in the selected schools between 1989 and 2009. Initial approaches were made by email or letter to nine who still resided and/or worked in the region. Six responding positively to an interview request. Further details of these participants are withheld to preserve their anonymity.

While it would have been ideal to have had interviews with all those who held principalships in these schools between 1989 and 2009 to ensure that a complete range of views and experiences were recorded, this was neither practical nor possible. Some declined the invitation to participate, others did not respond, and one could not be traced by this researcher. Nevertheless all schools are spoken for and, while the most recent period is fully represented, a range of experiences from the early nineties was also recorded. The critical years for the purposes of this study are those immediately following the major changes to enrolment regulations (1990 and 2000), and these are well covered.

Ethics Approval:

An application for ethics approval was submitted following university regulations and guidelines. Appropriate documentation included an information

sheet and consent forms for the participants to the interviews. Following the interviews, transcripts were returned to each of the interviewees for correction, comment and/or clarification of points. The names of the schools, their location, and the names of those interviewed has been kept confidential to assure participants that their professional integrity will not be compromised by anything that they have contributed to the study. Pseudonyms have been allocated to the schools and their locations for publication purposes.

The Data Collected and Analytical Decisions

Not all the statistical data sought for this research was accessible. The Ministry was able to provide an electronic file of some of the data from 1997 to the present day, though some roll return data prior to 2001 has not been electronically recorded and was thus unable to be accessed. In particular, this included the previous schools of enrolling students and school decile rankings. Older data was more problematic to access. Data relating to years prior to 1998 was only available in the form of the original roll return forms sent in by schools. These forms had been archived by the Ministry, but for some of the years their archive records were either incomplete, erroneous or file boxes could not be found. Data could not be retrieved for 1990, 1993, and 1996, while data for some primary and intermediate schools was missing for 1991, 1992, and 1995. Material relating to years prior to 1989 had been transferred to Archives New Zealand and proved equally elusive. Adequate, though incomplete, data could only be collected for 1984 and 1987. A full list of the data collected on each year is given in Appendix One.

Given these gaps in the data, a decision was made to make use of odd-numbered years only for analysis of the secondary school data. By doing this, sufficient detail is retained to identify any trends that may be apparent within the 25 year period, whilst minimizing the impact of the missing data. An exception to the odd-numbered rule was made for roll data from 1984 as it provides important additional evidence of the situation prior to the introduction of the Tomorrow's Schools reforms and it was the only year prior to 1987 where data was available about all the schools. Even numbered years have been used for analysis of the Year Eight data collected about primary schools so that comparison may be made with the following year's Year Nine intake.

The type of data requested by the Ministry on the roll return forms has changed at different times. The Ministry could not provide details of the precise year in which these changes occurred for the same reasons as given above. Question 7 on the July Roll Return required schools to record total enrolments of boys and girls at each level within the school. A separate question relating to the numbers of Maori students at each level was added after 1984, and another for Pacific Island students came in from 1991. In the early nineties the form was altered so that schools would provide a more exact breakdown of the ethnicity of their students, with separate categories for European/Pakeha, Maori, Pacific Islands, Asian, Other, and NZAID and FFP (Foreign Fee Payers). Up until this point, data was only requested for total numbers of students, Maori and Pacific Island. For the purposes of analysis, only the European, Maori and Pacific Island categories are referred to. For data from years prior to 1995, European/Pakeha numbers have been calculated by subtracting Maori and (when available) Pacific Island numbers of students. For the data from 1995 onwards, the last three categories (Asian, Other, and NZAID and FFP) have been aggregated with

European/Pakeha to retain comparability with earlier years. Pacific Island students are also included the European/Pakeha category for the years prior to 1991.

In the March 1st return data on a student's previous school only went back as far as 1997. For a number of years prior to this, schools had been asked to provide statistics only on those schools that contributed ten percent or more of their new student intake. This information is too incomplete to consider as reliable evidence for this study. Additionally, data for 1998, 1999 and 2000 could not be sourced which raises the possibility that 1997 might be an 'outlier' in terms of the statistics on previous schools of enrolling students.

Primary school enrolment numbers do not include those who sought education outside of Denton at any time before or during their primary years. The number of children in this category is unknown. Consequently an analysis of Year Nine enrolments based on the numbers of Year Eight 'graduates' does not, on its own, provide a complete picture and limits the validity of any conclusions drawn. There are two points to note, however. First, the focus of this study on the impact of differing sets of enrolment regulations is solely on secondary schools, though a study that focuses on primary schools may well be a useful field for future research. Second, by comparing primary school enrolments by age to census data an estimate can be made of the size of the group that are enrolled elsewhere. These five yearly estimates can then be used to establish the trend through the period that, in turn, may be used to underpin any conclusions linking Year Eight and Year Nine numbers.

Anonymisation of Data:

Collection and analysis of achievement data is complicated by the introduction of a new qualification system in 2002. NZQA provided an electronic file of School Certificate data from 1992 to 2002. Older data were not available. NCEA Level One data was downloaded from the NZQA website. Given the methodological divergence between the two assessment regimes, analysis of achievement levels across the two decades is not attempted. Rather, achievement under each assessment regime is discretely examined. University Bursary and NCEA Level Three data were also initially collected but a decision was then made that, given the number of confounding variables[12] that impact on both participation and achievement, their inclusion in this analysis would add little of substance.

Validity

The fundamental principle of mixed methods research is to make use of strategies with complimentary strengths and non-overlapping weaknesses.

While some debate the concept of validity as it relates to qualitative research, such data and the findings that come out of it must still be defensible. Johnson and Christensen (2008) define 'defensible' as plausible, credible and trustworthy (p. 275) and identify three types of validity that have particular application to qualitative data. Reporting of data must be factually accurate, participants' viewpoints and meaning must

[12] Entry and achievement rates for University Bursary and NCEA Level Three are dependent upon the retention of students beyond the age of compulsory schooling and are heavily influenced, for example, by job availability, community/family attitudes and culture, subject availability, tertiary course availability, related costs, school culture, and school policies.

be accurately interpreted, and that any theoretical explanation that comes out of the study must fit the data.

Establishing causality is frequently problematic in any research, and is more often subject to criticism if the study does not have a strong quantitative, and especially experimental, base. Alternatively, if one accepts the critical realist's approach to casual explanation (Maxwell, 2008), it is possible to more closely identify and examine the processes at work in a specific situation and support the validity of one's findings for that particular circumstance at that particular time. Maxwell argues that the variance approach used in experimental and quasi-experimental designs can only infer causality through "abstract probabilistic coefficients" (p. 172), using the analogy of the 'black box' to describe its treatment of the causal process itself. On the other hand, when examining a specific outcome in a specific context, qualitative research into the actual events and processes and into the actors' reasoning and experiences provides for the development of a stronger causal explanation for that outcome. The situational context must be acknowledged as an inherent part of the process and any causal explanation that is generated is not necessarily generalisable. Maxwell asserts that qualitative researchers can be as 'scientific' in their approach as quantitative researchers through the systematic development and validation of causal explanation. Further to this, the observation of the causal process, the importance placed upon context, and an insistence that meaning is as real as physical phenomena contribute elements that can complement the strengths of quantitative research by participating in "decisions over the status and causal (as opposed to statistical) significance" (p. 173) of aspects of the data.

Chapter Four: Quantitative Data Findings

The quantitative data used in this chapter comprises administrative statistics from the March and July roll returns of schools to the Ministry of Education, and achievement data from the New Zealand Qualifications Authority. These data provide evidence for the first three research questions. Patterns of secondary school enrolment within the competition space over the period under study are revealed, with a specific focus on enrolments of those in their first year of secondary school. Enrolment numbers, both for whole school and Year Nines, are disaggregated into sex and ethnicity to examine the degree to which polarisation of the student population has occurred. The correlation between these patterns of enrolment and achievement data tests the assertion by critics of the marketisation of education that academic performance is a casualty of the ensuing spiral of decline. In relation to the fourth research question, the quantitative data in this chapter provides evidence to assess the degree to which the changes in enrolment and achievement trends coincide with changes to enrolment regulations in 1989-91 and in 2000.

Roll Data

Tables 4.1 to 4.22 use data from July 1st returns. Tables 4.23 to 4.34 use data collected via March 1st returns. As noted earlier, data for odd-numbered years form the basis of the following analysis to maximise the number of data points available. Whole-school student roll numbers are studied first with trends in ethnicity and gender established. This is followed by an equivalent analysis of the Year Nine intakes of each of the four secondary schools and a comparison with Year Eight intakes of the previous years. Finally, data on the previous school of enrolling students are examined and compared to the 'natural' catchment areas defined for each of the secondary schools.

Whole-School Rolls:

Broadly speaking, from 1984 to 2009 secondary school enrolments at the high schools within Denton fell and then subsequently rose from the turn of the century. Table 4.1 provides data from the Ministry of Education's July 1st Returns for each of the four schools and a total for Denton. This total does not include enrolments in the State integrated school or in the private school and the kura that opened more recently. Table 4.2 presents the annual change in roll numbers both in absolute terms and as percentages for the schools and for Denton. Table 4.3 provides percentage changes for a range of periods between 1989 and 2009.

The greatest fall in the total roll for the four high schools was between 1989 and 1991 when it fell by 853 students or 19.3 percent. The total roll shrank by a further 424 students (9.6 percent) in the following four years. From 1997 to 2001 there was relative stability with total enrolments growing by an average of 0.8 percent a year. Since 2001,

Table 4.1 Total Enrolments, 1984-2009

	Burton	Ropata	Rossi	McKenna	Denton
1984	1207	1086	1370	1338	5000
1987	1218	877	1055	1275	4425
1989	1303	867	1040	1213	4422
1991	1030	657	747	1135	3569
1993					
1995	993	541	405	1207	3145
1997	894	602	436	1263	3195
1999	899	581	476	1296	3252
2001	977	527	504	1311	3320
2003	977	587	510	1419	3493
2005	1006	650	581	1496	3733
2007	1095	587	677	1543	3902
2009	1097	550	714	1640	4002

Table 4.2 Biannual Change in Enrolments, 1987-2009

	Burton		Ropata		Rossi		McKenna		Denton	
	ΔY2-Y1	%ΔY2-Y1	ΔY2-Y1	%ΔY2-Y1	ΔY2-Y1	%ΔY2-Y1	ΔY2-Y1	%ΔY2-Y1	ΔY2-Y1	%ΔY2-Y1
1987	-	-	-	-	-	-	-	-	-	-
1989	85	7.0%	-10	-1.2%	-15	-1.4%	-62	-4.9%	-2	-0.1%
1991	-273	-20.9%	-210	-24.2%	-292	-28.1%	-78	-6.4%	-853	-19.3%
1993										
1995	-19	-1.8%	-58	-8.8%	-171	-22.9%	36	3.2%	-212	-5.9%
1997	-99	-9.9%	61	11.2%	31	7.6%	56	4.7%	49	1.6%
1999	5	0.5%	-21	-3.4%	40	9.2%	33	2.6%	57	1.8%
2001	78	8.7%	-54	-9.3%	29	6.0%	15	1.1%	68	2.1%
2003	0	0.0%	60	11.3%	6	1.1%	108	8.2%	173	5.2%
2005	30	3.1%	63	10.7%	71	13.9%	77	5.4%	241	6.9%
2007	88	8.8%	-63	-9.7%	96	16.6%	47	3.1%	169	4.5%
2009	2	0.2%	-37	-6.3%	37	5.4%	97	6.3%	100	2.6%

Table 4.3 Periodic Change in Enrolments

	Burton	Ropata	Rossi	McKenna	Denton
%Δ 87-95	-18.5%	-38.3%	-61.6%	-5.3%	-28.9%
%Δ 87-99	-26.2%	-33.7%	-54.9%	1.7%	-26.5%
%Δ 99-09	22.1%	-5.3%	50.1%	26.5%	23.1%
%Δ 87-09	-10.0%	-37.3%	-32.3%	28.7%	-9.6%

there has been an average growth rate of 2.6 percent in the total roll for the four high schools. In the decade from 1989, the roll of the region fell 26 percent, and has risen by 23 percent in the decade since 1999. The 2009 total roll is still 9.5 percent lower than it was in 1989. There was also a fall in the total secondary school roll recorded over the

three year period prior to 1987, though the rate at which this fall occurred accelerated after 1989. As noted earlier and shown in Appendix One, the data that could be collected for years prior to 1987 was severely limited. Total roll numbers only for each school were available for 1983 and 1984 and both Ropata College and Rossi College started losing students from 1985[13], while the other two schools had relatively consistent roll numbers until at least 1989.

For Burton College, the changes in the school roll broadly keep to the same trend as those for Denton. Following a period of growth, the school roll fell by 20.9 percent between 1989 and 1991, by 31 percent for the decade to 1999, and grew by 22 percent in the decade since 1999. Its roll, however has not recovered to the same extent, still 15.8 percent behind its 1989 total. The experience of the other three high schools differs markedly from these trends.

Ropata College has long been the smallest of the four schools and it has experienced sizeable fluctuations in its roll throughout the last two decades. Having reduced in size by 37.6 percent between 1989 and 1995, the numbers since show that the school roll seems to be in a four-year cycle with two years of gains followed by two years of losses of approximately 23 students a year. Currently the Ropata College roll is 36.5 percent smaller than it was in 1989.

The changes to the Rossi College roll were the greatest of all the secondary schools in the area. In the five years to 1989 the school roll had fallen by nearly 300 or 25 percent. Over the next six years, this fall accelerated with a further 61 percent reduction in student numbers so that by 1995 Rossi College was less than a third of its size of a decade earlier. In the ten years from 1989 to 1999, the school roll fell by 54.2

[13] The Ropata College roll stood at 1065 in 1983 and 1086 in 1984, while for Rossi College the school roll had been 1295 and 1370 respectively.

percent. In the ten years since there has been growth that has seen it return to the size it was in 1991. With 714 students, the school is 31 percent smaller than it was in 1989.

McKenna College is the only school of the four to be larger now than it was in 1989. Although it lost a few students between 1985 and 1991, McKenna College then steadily recovered its numbers over the following eight years. Since 2003, growth in the school roll has strengthened to an average of 3 percent per year and the cumulative effect of this means that now it is more than a third larger than it was in 1989.

Ethnicity

Tables 4.4, 4.5, and 4.6 show the sex and ethnic breakdown of the schools. Throughout the period under study there have been more boys than girls attending secondary schools in Denton, however the proportional gap between the two had widened slightly by the mid-nineties and has remained between six and eight percentage points since then. While the total number of students fell by 26.5 percent between 1989 and 1999, the number of girls fell by 29.1 percent. As total numbers increased since 1999 by 23.1 percent, the number of girls rose at a slower rate.

Changes to the ethnic composition of the student body are less straight-forward to identify. As noted earlier, prior to 1990 Question 7 on the July roll return form simply asked for Maori student numbers to be noted separately from total roll numbers. European/Pakeha numbers for 1987 and 1989 include Pacific Island and students and were calculated by subtracting Maori from the total enrolments for the school. A Pacific Island category had been added by 1991, and then at some point between 1991 and 1995 the Ministry decided that a more detailed breakdown of student ethnicity in Question 7 was required. Total numbers of boys and girls at each level was replaced with separate

categories for European/Pakeha, Maori, Pacific Island, Asian, Other and NZAID and FFP students. In order to establish a level of comparability with earlier years, and as the numbers of students categorised as Asian, Other and NZAID and FFP is relatively small, these last three categories have been aggregated with European/Pakeha numbers in the tables.

Table 4.4 Total Enrolments by Sex and Ethnicity, 1987-2009

	Total Roll				
	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	2290	2134	3636	789	
1989*	2267	2155	3667	755	
1991	1873	1696	1978	637	954
1993					
1995	1717	1428	1672	683	790
1997	1724	1471	1663	705	826
1999	1738	1514	1670	726	856
2001	1780	1539	1666	758	896
2003	1889	1604	1753	861	879
2005	1969	1764	1850	955	928
2007	2064	1837	1935	959	1008
2009	2182	1819	1952	950	1099

* European/Pakeha numbers include Pacific Island students

Table 4.5 Percentage of Total Enrolments by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	51.8%	48.2%	82.2%	17.8%	..
1989*	51.3%	48.7%	82.9%	17.1%	..
1991	52.5%	47.5%	55.4%	17.9%	26.7%
1993	..	..	..	..	..
1995	54.6%	45.4%	53.2%	21.7%	25.1%
1997	54.0%	46.0%	52.1%	22.1%	25.9%
1999	53.4%	46.6%	51.4%	22.3%	26.3%
2001	53.6%	46.4%	50.2%	22.8%	27.0%
2003	54.1%	45.9%	50.2%	24.6%	25.2%
2005	52.7%	47.3%	49.6%	25.6%	24.9%
2007	52.9%	47.1%	49.6%	24.6%	25.8%
2009	54.5%	45.5%	48.8%	23.7%	27.5%

* European/Pakeha numbers include Pacific Island students

Table 4.6 Periodic Change in Total Enrolments by Sex and Ethnicity, 1987-2009

	Male	Female
%Δ 1989-1999	-23.4%	-29.7%
%Δ 1999-2009	25.6%	20.1%
%Δ 1989-2009	-3.7%	-15.6%

	European /Pakeha	Maori	Pacific Islands
%Δ 1991-1999	-15.6%	-3.9%	-10.2%
%Δ 1999-2009	16.9%	31.0%	28.4%
%Δ 1991-2009	-1.3%	25.8%	15.3%

The proportion of secondary school students in the four schools in Denton who are European/Pakeha/Other has steadily declined since 1991. While still comprising just under half of the student body, this figure is down from 55.4 percent at the start of the nineties. Maori, on the other hand, have risen from 17.9 percent to 23.7 percent while the proportion of Pacific Island students has remained consistent throughout the period. Maori numbers fell the least during the nineties and have grown at twice the European/Pakeha rate since.

The actual numbers of students presents a starker picture of the ethnic change that has occurred. European/Pakeha numbers fell by 306 students or 15 percent in the first five years of the nineties and only since 2001 has there been moderate growth of about 2 percent per year. In fact, half of this growth can be attributed to an increase in Asian students (see Appendix Two, Table 4A). There was also a significant drop between 1989 and 1991 when European/Pakeha numbers, after combining with Pacific Island students for 1991, fell by 735. Given the relative size of the two populations, European/Pakeha could fairly account for at least two-thirds of this fall. If this was what occurred, then the schools of Denton lost 13 percent of their European/Pakeha students in two years.

As can be seen in tables 4.7 and 4.8, in 1991 one third of Burton College students were of Maori or Pacific Island descent in almost equal numbers. Ten years later, the school roll was almost equally divided between European/Pakeha, Maori, and Pacific Island students. The 1991 figure itself reflected a relatively rapid change from two years earlier. The school roll was 1303 in 1989 of which 1076 were non-Maori. By 1991, non-Maori numbers (which included Pacific Island students) had fallen by 315 students while the total roll had fallen by 273 students. Given the upward trend in Pacific Island

Table 4.7 Total Enrolments in Burton College by Sex and Ethnicity, 1987-2009

	European /Pakeha	Maori	Pacific Islands
1987*	1076	142	
1989*	1153	150	
1991	643	193	195
1993			
1995	464	246	282
1997	393	222	279
1999	383	221	295
2001	361	276	339
2003	401	266	309
2005	422	264	321
2007	518	280	297
2009	536	282	279

* European/Pakeha numbers include Pacific Island students

Table 4.8 Percentage of Total Enrolments in Burton College by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	52.9%	47.1%	88.3%	11.7%	
1989*	51.5%	48.5%	88.5%	11.5%	..
1991	55.1%	44.9%	62.4%	18.7%	18.9%
1993	..	..	..	..	..
1995	54.5%	45.5%	46.8%	24.8%	28.4%
1997	52.6%	47.4%	44.0%	24.9%	31.2%
1999	54.2%	45.8%	42.6%	24.6%	32.8%
2001	57.0%	43.0%	37.0%	28.3%	34.7%
2003	56.3%	43.7%	41.1%	27.2%	31.7%
2005	54.2%	45.8%	41.9%	26.2%	31.9%
2007	53.5%	46.5%	47.3%	25.5%	27.1%
2009	53.8%	46.2%	48.9%	25.7%	25.4%

* European/Pakeha numbers include Pacific Island students

numbers in the following years, a suggestion that almost all of the students lost at this time were European/Pakeha is not unlikely. In the four years following 1991 Maori and Pacific student numbers continued to increase while the roll fell. This trend continued through to 2001 by which stage Maori and Pacific Island numbers had risen by 43.5 percent and 74.1 percent respectively. By 1999 European/Pakeha student numbers had fallen for ten years straight to be 60 percent of their 1991 levels, and only after 2001 did numbers start to rise again. A more detailed breakdown of the ethnicity of the European/Pakeha (see Appendix Two, Table 4B) aggregate for Burton College shows

that the numbers of Asian and Other students have not varied significantly and that there has been relatively steady year-on-year growth in European/Pakeha numbers since 2001.

Table 4.9 Total Enrolments in Ropata College by Sex and Ethnicity, 1987-2009

	European /Pakeha	Maori	Pacific Islands
1987*	598	279	
1989*	649	218	
1991	284	203	170
1993			
1995	141	256	144
1997	159	305	138
1999	159	297	125
2001	122	280	126
2003	107	352	128
2005	128	392	130
2007	81	379	126
2009	60	337	154

* European/Pakeha numbers include Pacific Island students

Table 4.10 Percentage of Total Enrolments in Ropata College by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	52.0%	48.0%	68.2%	31.8%	..
1989*	53.8%	46.2%	74.9%	25.1%	..
1991	53.2%	46.8%	43.3%	30.9%	25.8%
1993	..	..	..	..	..
1995	55.7%	44.3%	26.1%	47.2%	26.7%
1997	59.2%	40.8%	26.5%	50.7%	22.9%
1999	52.7%	47.3%	27.4%	51.1%	21.5%
2001	53.7%	46.3%	23.0%	53.0%	23.9%
2003	56.6%	43.4%	18.2%	60.0%	21.9%
2005	54.7%	45.3%	19.8%	60.3%	19.9%
2007	52.9%	47.1%	13.9%	64.6%	21.5%
2009	53.3%	46.7%	10.8%	61.3%	27.9%

* European/Pakeha numbers include Pacific Island students

Ropata College has long had a reputation as a school with strong Maori representation. Tables 4.9 and 4.10 show that it consistently has the greatest number of Maori students of the four secondary schools in Denton. Nearly 31 percent of the roll identified as Maori in 1991, just over a quarter as Pacific Island, with the remainder falling into the European/Pakeha/Other category. While the total roll for the school falls

in the years that followed, Maori numbers rise fairly consistently so that, by 2003, they comprise about 60 percent of the student population. This change in the ethnic composition of Ropata College is the most marked of any of the secondary schools in the area and appears to have happened in two distinct phases. The start of the nineties witnessed a clear shift from the past with European/Pakeha and Pacific Island students equally contributing to half of the school roll. This profile continued until the turn of the century when a second shift occurred. The numbers of European/Pakeha students, while relatively steady during the nineties, became increasingly unstable from 2001, to the point where this group contributed only 10.8 percent of the school roll for 2009. Pacific Island numbers, on the other hand, have been relatively stable since 1999, hovering between 125 and 130 students, although the 2009 figure jumped by nearly thirty.

As noted above, Rossi College experienced the greatest instability in its school roll. Changes in the ethnic composition of the school population appear to have been less substantial. While the numbers from all ethnic groups fell in the early part of the nineties, the proportions have remained relatively static. Pacific Island students are the

Table 4.11 Total Enrolments in Rossi College by Sex and Ethnicity, 1987-2009

	European /Pakeha	Maori	Pacific Islands
1987*	768	287	
1989*	722	318	
1991	50	177	520
1993			
1995	19	93	292
1997	42	73	320
1999	34	93	348
2001	54	95	355
2003	56	109	345
2005	52	147	383
2007	69	141	468
2009	75	140	500

* European/Pakeha numbers include Pacific Island students

Table 4.12 Percentage of Total Enrolments in Rossi College by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	50.1%	49.9%	72.8%	27.2%	..
1989*	49.8%	50.2%	69.5%	30.5%	..
1991	49.2%	50.8%	6.7%	23.6%	69.6%
1993	..	..	..	..	..
1995	52.4%	47.6%	4.8%	22.9%	72.2%
1997	49.2%	50.8%	9.7%	16.8%	73.4%
1999	48.4%	51.6%	7.2%	19.5%	73.3%
2001	48.0%	52.0%	10.7%	18.9%	70.5%
2003	47.9%	52.1%	11.0%	21.3%	67.6%
2005	47.5%	52.5%	8.9%	25.2%	65.9%
2007	49.6%	50.4%	10.2%	20.8%	69.0%
2009	51.5%	48.5%	10.4%	19.6%	70.0%

* European/Pakeha numbers include Pacific Island students

dominant group making up more than two-thirds of the roll. European/Pakeha and Maori numbers have hovered around ten percent and twenty percent respectively. Within the former category, Asian students have become an increasingly dominant subgroup (see Appendix Two, Table 4D). Given the lack of detailed data prior to 1991, no conclusion can be drawn on any notable changes from this period.

Table 4.13 Total Enrolments in McKenna College by Sex and Ethnicity, 1987-2009

	European /Pakeha	Maori	Pacific Islands
1987*	1193	81	
1989*	1143	70	
1991	1001	65	69
1993			
1995	1048	88	71
1997	1068	104	91
1999	1094	115	88
2001	1129	107	76
2003	1189	134	96
2005	1248	152	95
2007	1267	159	117
2009	1282	191	167

* European/Pakeha numbers include Pacific Island students

Table 4.14 Percentage of Total Enrolments in McKenna College by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	51.9%	48.1%	93.6%	6.4%	..
1989*	50.5%	49.5%	94.2%	5.8%	..
1991	51.8%	48.2%	88.2%	5.8%	6.1%
1993	..	..	..	..	..
1995	54.9%	45.1%	86.8%	7.3%	5.9%
1997	54.1%	45.9%	84.6%	8.3%	7.2%
1999	55.1%	44.9%	84.4%	8.8%	6.8%
2001	53.2%	46.8%	86.1%	8.1%	5.8%
2003	53.7%	46.3%	83.8%	9.5%	6.8%
2005	53.0%	47.0%	83.4%	10.2%	6.4%
2007	53.9%	46.1%	82.1%	10.3%	7.6%
2009	56.7%	43.3%	78.1%	11.7%	10.2%

* European/Pakeha numbers include Pacific Island students

McKenna College has experienced gradual change in its ethnic composition across the last twenty years. The proportion of students identifying as Maori has doubled from 5.8 to 11.7 percent despite Maori numbers nearly tripling since 1989. Pacific Island numbers have also grown, but this has generally been in line with the overall growth on the roll. The proportion of European/Pakeha students has declined by over eleven percentage points over the same period. The make-up of this group has changed, however (see Appendix Two, Table 4E). Since 1995 there has been steady growth in the numbers of Asian and (more recently) Other, NZAID and FFP students, so that now they make up nearly 15 percent of the total school roll.

Year Nine Intakes

An analysis of the Year Nine student intake allows the development of a more specific picture of the enrolment patterns experienced by each of the schools. Variables that may impact upon total school rolls such as the state of the job market or the costs

associated with tertiary education do not hold sway. This Year Nine data is displayed in tables 4.15 and 4.16, below.

Table 4.15 Year Nine Enrolments, 1984-2009

	Burton	Ropata	Rossi	McKenna	Denton
1984	288	271	339	339	1237
1987	265	189	236	240	930
1989	224	201	252	245	922
1991	238	132	139	266	775
1993					
1995	252	117	83	277	729
1997	169	140	103	258	669
1999	193	103	80	258	634
2001	251	72	92	280	695
2003	229	135	126	284	775
2005	228	139	126	307	800
2007	250	110	141	319	820
2009	266	111	140	331	848

Table 4.16 Periodic Change in Year Nine Enrolments

	Burton	Ropata	Rossi	McKenna	Denton
%Δ 1984-1989	-22.3%	-25.8%	-25.7%	-27.7%	-25.5%
%Δ 1989-1995	12.8%	-41.7%	-67.3%	13.1%	-20.9%
%Δ 1989-1999	-13.8%	-48.6%	-68.2%	5.1%	-31.2%
%Δ 1999-2009	38.1%	7.8%	74.3%	28.4%	33.8%
%Δ 1989-2009	19.0%	-44.6%	-44.5%	35.0%	-8.0%

Total Year Nine enrolments at the four secondary schools in Denton fell consistently through until 1999. The greatest single fall was between 1989 and 1991 when 147 fewer students enrolled. The trend reversed from 2001. Nevertheless, the Year Nine intake in 2009 was still eight percent less than it was in 1989. Falls within each of the schools between 1984 and 1989 are relatively similar and suggest that a demographic shift was at work within the region. From 1991, however the trends in Year Nine enrolments are quite different for each school.

Burton College managed to maintain a comparatively stable intake across the last twenty years apart from a period in the latter half of the nineties. The reasons for this

dip will be considered later in this chapter. In the years since then, the Year Nine roll has risen by 38.1 percent to the level where new enrolments in 2009 are similar to those in the years prior to 1989.

Ropata College and Rossi College both experienced a rapid fall in Year Nine numbers between 1989 and 1995. Ropata College was enrolling less than sixty percent of its 1989 intake while for Rossi College it had fallen to a third of the 1989 level. While the latter has had a rise in enrolments since 2001, the Ropata College intake is still subject to sizeable fluctuations. On an annualised basis these fluctuations have been as big as 79 percent (2001 to 2002), and have averaged nearly seven percent per annum over the last five years. Both schools are currently enrolling just slightly more than half the numbers of Year Nine students they were twenty years earlier.

The McKenna College Year Nine roll dipped briefly in 1997, but has otherwise grown throughout the period. The rate of growth has risen slightly from 2005 to the point where the Year Nine intake in 2009 is 35 percent higher than it was in 1989.

Tables 4.17, 4.18, and 4.19 show the gender and ethnic make up for the four schools combined. The ratio of boys to girls enrolling for the first time in secondary schools is unfailingly weighted in favour of the former throughout the period, although the gap appears to have intensified from the two to four percentage points of the late eighties to be trending around nine percentage points since the mid-nineties. The gender imbalance for 1995 stands out as the year in which it was greatest. The rate of change in the two populations shown in table 4.19 show that the number of girls enrolling at Year Nine was less stable that the number of boys.

Table 4.17 Year Nine Enrolments by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	473	456	730	199	
1989*	494	428	738	183	
1991	399	376	402	174	198
1993					
1995	432	297	371	187	171
1997	352	318	320	170	180
1999	359	275	295	157	182
2001	390	305	323	178	194
2003	401	374	338	236	201
2005	429	371	369	237	194
2007	455	365	405	206	209
2009	464	384	351	257	241

* European/Pakeha numbers include Pacific Island students

Table 4.18 Percentage of Year nine Enrolments by Sex and Ethnicity, 1987-2009

	Male	Female	European /Pakeha	Maori	Pacific Islands
1987*	50.9%	49.1%	78.5%	21.5%	..
1989*	53.6%	46.4%	80.1%	19.9%	..
1991	51.5%	48.5%	51.9%	22.5%	25.6%
1993	..	..	..	..	..
1995	59.3%	40.7%	50.9%	25.6%	23.4%
1997	52.6%	47.4%	47.8%	25.3%	26.9%
1999	56.6%	43.4%	46.5%	24.8%	28.8%
2001	56.1%	43.9%	46.5%	25.6%	27.9%
2003	51.8%	48.2%	43.6%	30.5%	25.9%
2005	53.6%	46.4%	46.1%	29.7%	24.2%
2007	55.5%	44.5%	49.4%	25.2%	25.5%
2009	54.7%	45.3%	41.4%	30.3%	28.4%

* European/Pakeha numbers include Pacific Island students

Table 4.19 Periodic Change in Year Nine Enrolments by Sex and Ethnicity

	Male	Female
%Δ 1989-1999	-27.4%	-35.7%
%Δ 1999-2009	29.4%	39.6%
%Δ 1989-2009	-6.0%	-10.2%

	European /Pakeha	Maori	Pacific Islands
%Δ 1991-1999	-26.8%	-14.4%	-8.1%
%Δ 1999-2009	19.1%	63.5%	32.1%
%Δ 1991-2009	-12.8%	40.0%	21.4%

The overall trend in ethnic composition of the Year Nine intake echoes that for the total roll of the four schools, although Maori numbers comprise a noticeably greater proportion of the Year Nine cohort and have grown at a significantly higher rate in the past decade.

Table 4.20 Percentage of Year Nine Enrolments by School and Sex, 1987-2009

	Burton		Ropata		Rossi		McKenna	
	Male	Female	Male	Female	Male	Female	Male	Female
1987*	53%	47%	50%	50%	51%	49%	49%	51%
1989*	58%	42%	53%	47%	55%	45%	49%	51%
1991	52%	48%	56%	44%	46%	54%	51%	49%
1993								
1995	58%	42%	63%	37%	65%	35%	57%	43%
1997	56%	44%	54%	46%	47%	53%	52%	48%
1999	60%	40%	52%	48%	53%	47%	57%	43%
2001	64%	36%	51%	49%	56%	44%	50%	50%
2003	53%	47%	57%	43%	43%	57%	52%	48%
2005	58%	42%	53%	47%	48%	52%	53%	47%
2007	55%	45%	50%	50%	60%	40%	56%	44%
2009	54%	46%	48%	52%	54%	46%	57%	43%

Table 4.21 Year Nine Enrolments by School and Ethnicity, 1987-2009

	Burton			Ropata			Rossi			McKenna		
	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands
1987*	227	38		115	75		165	71		224	16	
1989*	189	34		138	63		185	68		227	18	
1991	116	62	61	52	50	30	7	41	91	228	21	17
1993												
1995	100	78	75	30	66	21	1	18	63	241	24	13
1997	64	48	56	30	84	26	7	15	81	219	23	16
1999	61	52	80	19	63	21	3	15	62	211	28	19
2001	76	84	92	11	49	11	2	23	66	234	22	24
2003	95	76	58	15	92	29	3	37	86	225	32	28
2005	89	70	69	18	94	26	7	41	78	254	32	21
2007	138	57	55	17	71	22	7	38	96	243	40	36
2009	104	95	66	13	70	29	7	32	101	227	60	45
%Δ '91-99	-47.5%	50.0%	32.1%	-62.2%	0.0%	-30.8%	-50.0%	-78.0%	-31.6%	-7.5%	50.0%	13.3%
%Δ '99-09	71.7%	84.4%	-17.1%	-35.3%	10.9%	38.9%	100.0%	115.4%	63.0%	7.6%	116.7%	129.4%
%Δ '91-09	-9.9%	176.7%	9.4%	-75.6%	10.9%	-3.8%	0.0%	-52.5%	11.4%	-0.5%	225.0%	160.0%

* European/Pakeha numbers include Pacific Island students

Table 4.22 Percentage of Year Nine Enrolments by School and Ethnicity, 1987-2009

	Burton			Ropata			Rossi			McKenna		
	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands
1987*	86%	14%	-	61%	39%	-	70%	30%	-	93%	7%	-
1989*	85%	15%	-	69%	31%	-	73%	27%	-	93%	7%	-
1991	49%	26%	25%	39%	38%	23%	5%	30%	65%	86%	8%	6%
1993												
1995	40%	31%	30%	25%	57%	18%	1%	22%	76%	87%	9%	5%
1997	38%	29%	33%	21%	60%	19%	7%	14%	79%	85%	9%	6%
1999	32%	27%	42%	19%	61%	20%	4%	19%	77%	82%	11%	8%
2001	30%	33%	37%	16%	68%	16%	3%	25%	73%	84%	8%	9%
2003	42%	33%	26%	11%	68%	21%	3%	29%	68%	79%	11%	10%
2005	39%	31%	30%	13%	68%	19%	5%	33%	62%	83%	10%	7%
2007	55%	23%	22%	16%	65%	20%	5%	27%	68%	76%	13%	11%
2009	39%	36%	25%	11%	63%	26%	5%	23%	72%	69%	18%	13%
Δ '91-99	-17.0	0.8	16.2	-20.2	22.9	-2.6	-0.7	-11.2	11.9	-4.0	2.9	1.1
Δ '99-09	7.7	9.0	-16.7	-7.5	1.8	5.8	0.6	4.4	-5.0	-13.3	7.3	5.9
Δ '91-09	-9.3	9.8	-0.5	-27.8	24.6	3.2	0.0	-6.8	6.8	-17.3	10.2	7.0

* European/Pakeha numbers include Pacific Island students

Table 4.20 provides a comparison of the gender balance of the Year Nine intake for each of the schools as well as an average rate across each decade. Two sets of statistics are notable. First, Burton College has maintained the highest imbalance, averaging 56.8 percent boys over the last twenty years. Around the turn of the century this climbed to well over 60 percent. Second, Rossi College is the only school to regularly enrol fewer boys than girls.

Changes in the ethnic composition of Year Nine students are more significant. As table 4.22 shows, both Burton and Ropata Colleges recorded noticeable jumps in the proportion of Year Nine Maori students between 1989 and 1991 of eleven percentage points and seven percentage points respectively. The actual numbers, however, show a very different experience for each school. While Burton welcomed 28 more new Maori students than the year before, Ropata enrolled thirteen fewer. Both schools experienced rapid declines in both the numbers and proportion of European/Pakeha students entering

the school at Year Nine, and this trend continued throughout the nineties. From 1997 Burton College has had an intake of roughly equal thirds European/Pakeha, Maori and Pacific Island. Ropata College, on the other hand, saw its European/Pakeha numbers fall further, both in numerical and percentage terms while Maori numbers strengthened. Maori comprise two thirds of Year Nines at Ropata with Pacific Island students making up the rest. Rossi College has a similarly dominant group with its Pacific Island students. European/Pakeha numbers are half those of Ropata College. Four out of five students enrolling at McKenna College between 1991 and 2005 were of European/Pakeha/Other ethnicity with the remainder equally split between Maori and Pacific Island. Recent years have seen the only major shift in ethnicity at the school as Maori and Pacific Island numbers have increased.

Two sets of data provide statistics that link the four secondary school of Denton to the primary schools from whence their students come, but each also has shortcomings. March 1st returns have asked, since 1997, for the previous school of all newly enrolled students to be identified. For the Year Nine enrolments, this data does provide evidence of an individual school's catchment and allows any changes in the patterns of 'school of origin' over the course of these years to be identified. Unfortunately the data does not cover the years prior to 1997 and so only enables analysis related to the change in enrolment regulations that occurred in 1999. Additionally, data for 1998, 1999 and 2000 was not available which raises the possibility that 1997 might be an 'outlier', an issue that is addressed later in the chapter. Roll data from the July 1st returns, on the other hand, does cover the entire period (with the exception of the years noted earlier) and has been aggregated to show the total numbers of Year Eight students leaving primary

schools in Denton. Given the four month separation between the March and July roll returns, some variance between the two sets of figures is expected.

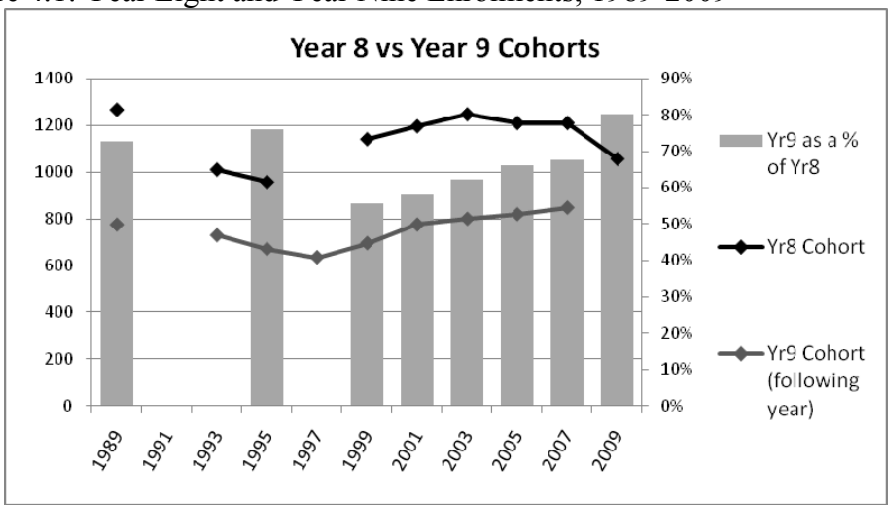
Year Eight Enrolments (July 1st roll returns)

Enrolment numbers for each even-numbered year from 1988 to 2008 are compared to the total Year Nine intake for the following odd-numbered year in table 4.23. The last column of the table shows Year Nine enrolments as a percentage of the Year Eight roll from the previous year. While there are three years for which enrolment numbers were not available, there is sufficient data to pick out contrasting trends in each of the decades. These trends and relationships are more clearly evident in Figure 4.1. While there was a dip in Year Eight numbers in the mid-nineties, the number of students enrolling in the four local high schools fell faster, and continued to fall through to the turn of the century. In 1999, Year Nine enrolments in Denton were 56 percent of the size of the previous year's Year Eight cohort compared to 73 percent a decade earlier. Ten years later, the proportion had climbed back to 80 percent.

Table 4.23 Year Eight and Year Nine Total Enrolments, 1988-2008

	Total Year Eight Roll	Total Year Nine Roll (following year)	Yr9 as a % of Yr8
1988	1265	922	73%
1990		775	
1992	1012		
1994	959	729	76%
1996		669	
1998	1141	634	56%
2000	1196	695	58%
2002	1246	775	62%
2004	1209	800	66%
2006	1209	820	68%
2008	1057	848	80%

Figure 4.1: Year Eight and Year Nine Enrolments, 1989-2009



A comparison of the ethnicity of the Year Eight cohorts to those of Year Nine in the following year also provides some relevant statistics. Table 4.24 shows the ethnicity of students in Year Eight alongside the Year Nine ethnicity for the following year (previously shown in Table 4.17). European/Pakeha numbers in both Year Eight and Nine fell in the early nineties, and while the former numbers rose somewhat towards the end of the decade, at Year Nine the rebound was later and more gradual. Consequently, students of Maori and Pacific Island descent have made up a greater proportion of enrolments at both year levels. Since 1991 European/Pakeha students have unfailingly made up a smaller proportion of school rolls in Year Nine than at Year Eight. Although Maori numbers at Year Eight have grown throughout the period, the growth has not been as consistent at Year Nine. Despite this, while Maori have comprised about a quarter of Year Eight students since 1994 at Year Nine they have been closer to a third since the turn of the century. The pattern is similar for Pacific Island students.

Table 4.24 Year Eight and Year Nine Enrolments by Ethnicity, 1988-2009

	YEAR 8 ENROLMENTS			YEAR 9 ENROLMENTS (following year)		
	European /Pakeha	Maori	Pacific Islands	European /Pakeha	Maori	Pacific Islands
1988*	1029	236		738	183	0
1990				402	174	198
1992	569	233	211	0	0	0
1994	516	238	205	371	187	171
1996				320	170	180
1998	580	289	272	295	157	182
2000	668	293	234	323	178	194
2002	658	312	276	338	236	201
2004	626	312	272	369	237	194
2006	649	301	259	405	206	209
2008	534	277	245	351	257	241

* European/Pakeha numbers include Pacific Island students

Table 4.25 Year Nine Enrolments as a Percentage of Year Eight Enrolments, 1989-2009

	Yr9 as a percentage of Yr8 (previous year)		
	European\Pakeha	Maori	Pacific Islands
1989*	72%	78%	..
…			
1995	72%	78%	83%
1997	..	..	..
1999	51%	54%	67%
2001	48%	61%	83%
2003	51%	76%	73%
2005	59%	76%	71%
2007	62%	68%	81%
2009	66%	93%	98%

* European/Pakeha numbers include Pacific Island students

Table 4.25 provides the Year Nine enrolments in each ethnic group as a percentage of the previous year's Year Eight roll. The data in this table provide further evidence of the trends noted above. European/Pakeha students from primary schools in Denton increasingly enrol in secondary schools beyond Denton during the nineties, and this trend begins to reverse from 2003. Maori students follow a similar trend, but the increase in attendance at local secondary schools has started earlier and been faster.

Pacific Island students have by-and-large continued through to a local high school although there is a dip in 1999.

This data can only be used to examine the rate of retention by all four schools of students moving on from the primary schools in Denton and does not provide evidence of any relationship between specific primary and secondary schools, however data from the March 1st roll returns does link schools and is examined next.

Previous School (March 1st returns)

The data in table 4.26 identifies the previous school of enrolling Year Nine students and has been aggregated for Denton. The data comes from the secondary schools both within and outside of Denton (excluding designated character and integrated schools) that have enrolled students from primary schools in Denton. The data shows a steady drop in the number of enrolments in schools other than the four schools of Denton since 1997, while the proportion of students attending the schools has increased from 81 percent in 1997 to hover around 90 percent from 2003.

Table 4.26 Total Year Nine Enrolments in Denton Schools, 1997-2009

	1997	…	2001	2003	2005	2007	2009
Total Yr9 Enrolments	863		873	954	933	943	862
Enrolled within Denton	697		743	837	815	872	767
%	81%		85%	88%	87%	92%	89%
Enrolled Elsewhere	166		131	117	118	71	95

In order to examine the pattern of enrolments for each of the secondary schools, the primary schools have been divided amongst the four secondary schools to establish a catchment for each school. All other things being equal (to use an economist's tool) it is logical to assume that most families would look first to enrol in their nearest

secondary school. Exceptions would be those for whom enrolment in a designated character, integrated or kura kaupapa school was a requirement of secondary schooling. On that basis, therefore, the 'natural' catchment for a secondary school can be thought of as comprising those primary schools for which the secondary school is the closest geographically. This assumes that students have enrolled in primary schools on the same basis, or at least enrolled in a primary school that is reasonably proximate to their usual residence. Table 4.27 shows the catchments of each of the high schools on this basis.

Table 4.27 School Catchments[14]

	'Natural' Catchment
Burton College	Freeman, Goodall, Grainger, Harrison, Hudson, Jeffries, Knight, Kumari, Manu, Fleming Intermediate
Ropata College	Braithwaite Intermediate, Mills
Rossi College	Avia Intermediate, Greenlaw, McKay, Morrison
McKenna College	Aleni Intermediate , Neilson School

Alternatively, if one were to use the home zones established under the Education Amendment Act 2000 as the basis upon which to identify catchment primary schools, a similar distribution would be expected. In this case the two lists are identical. For Burton College and McKenna College, the same primary schools all fall within their respective home zones. Ropata and Rossi Colleges are without home zones, but their closest schools do not fall within the others' zones and have a very clear geographic association with either school. Generally speaking, then, there is a natural distribution of primary schools between the four colleges that encourages enrolment in the nearest high school based on convenience of access. There are two schools that provide an exception

[14] Fleming Intermediate closed in 1999. Freeman had Year Seven and Eight students from 1992, Manu, and McKenna from 1994, Greenlaw, McKay, and Morrison from 1998, and Mills School from 2000.

to this. For students from Jeffries School and Kumari School in the north of Denton, the configuration of public transport is such that it is easier for them to bypass Burton College (the closest college and the one for which they are zoned) and travel directly to the furthest of the four colleges, McKenna, in the south. Enrolment trends for students from these two schools will be discussed later in this chapter, suffice to say that there do seem to be implications for both intermediate and secondary enrolments. This further raises a question about what defines a 'reasonably convenient school', an issue that is addressed in the final chapter.

Tables 4.28 to 4.31 show the patterns of previous school for the enrolling Year Nine students at each of the four secondary schools. Enrolments from their own catchment schools are shown in the first column, those from other's catchments are in the second, with students originating outside of Denton in the third column. The fifth column shows the proportion of the available students from within their catchment that each college has enrolled. The last column shows what percentage of a college's Year Nine intake comes from their catchment schools. In addition to commentary on the following tables, reference is also made to data in Appendix Two. The appendix contains a table displaying the previous schools of students enrolling in the four colleges and in secondary schools beyond Denton (Table 4F) and in the intermediates (Table 4G) organised by year. It is from this data that the following tables were constructed,

Table 4.28 Previous School of Burton Year Nine Students, 1987-2009

	Catchment Schools	Other Denton Schools	Other Schools	**Total Yr9 Roll**	% Catchment on Roll	% Roll from Catchment
1997	110	49	19	178	36%	62%
2001	95	166	3	263	42%	36%
2003	132	118	2	252	54%	52%
2005	117	95	6	218	49%	54%
2007	185	74	3	262	68%	70%
2009	165	61	3	228	59%	72%

The Burton College catchment comprises nine schools, although Fleming Intermediate was also in the mix until it closed in 1999. Since 1997 Burton College has attracted an increasing share of the students from within its catchment – approximately sixty percent since 2007 – however three schools have been consistent in sending the majority of their students to schools not just outside the catchment, but beyond Denton. Most students from Kumari School enrol in either Piper College or, up until 2003, one or other of the central city schools. More Freeman School and Goodall School students have consistently enrolled outside the Burton catchment than within, and spread themselves amongst McKenna College and the colleges beyond Denton. Jeffries School, along with Kumari School, was mentioned earlier as having easier access via public transport to McKenna College than to Burton. This was reflected in enrolments up until 2005 but since 2007 the majority of students have enrolled at Burton.

Enrolments at Burton College surged in 2001, with 85 more students enrolling in Year Nine than in 1997. While the proportion of students that came from catchment schools was slightly up on 1997, there were triple the number of enrolments from other Denton primary schools. Sixty four percent of Year Nine enrolments came from outside the catchment schools in that one year. While the majority came from the Rossi catchment schools there was also a surge in numbers from Braithwaite Intermediate (Ropata catchment) and a jump in enrolments from Aleni Intermediate (McKenna). Over the following eight years the numbers coming from schools outside the catchment steadily dropped back, but in general are still above their 1997 levels. For example, in 1997, 2001 and 2003 one third of students departing Avia Intermediate enrolled at Burton. This has subsequently fallen to less than 15 percent. The exception is McKay School from which nearly two-thirds of students enrol at Burton throughout the period.

Table 4.29 Previous School of Ropata Year Nine Students, 1987-2009

	Catchment Schools	Other Denton Schools	Other Schools	**Total Yr9 Roll**	% Catchment on Roll	% Roll from Catchment
1997	101	44	15	159	90%	63%
2001	50	21	3	74	59%	67%
2003	87	51	6	144	81%	60%
2005	84	51	4	139	78%	60%
2007	74	42	1	118	79%	63%
2009	51	38	2	91	71%	56%

The Ropata College catchment has two schools: Braithwaite Intermediate and Mills School, which has been a full primary school since 2001. Despite the fluctuations in the Ropata College roll, the origins and composition of its Year Nine intake has been relatively steady between 2003 and 2007. Ropata enrolled around four-fifths of the students coming out of its two feeder schools, and these students have made up approximately sixty percent of the cohort. However there is a significant variation between the statistics for 1997 and 2001 and the years that followed. Whereas in 1997 nearly all students in the catchment carried on to their local college, in 2001 nearly a third of Year Nine students from Braithwaite Intermediate enrolled at Burton College. In 2009, enrolment rates at Ropata fell, though of greater significance to the college is the longer term trend of shrinking student rolls at both catchment schools.

The number of students enrolling from outside the Ropata College catchment has also undergone a gradual fall. Avia Intermediate and Morrison School have been the chief source of these students although the numbers from here too are dwindling.

Table 4.30 Previous School of Rossi Year Nine Students, 1987-2009

	Catchment Schools	Other Denton Schools	Other Schools	**Total Yr9 Roll**	% Catchment on Roll	% Roll from Catchment
1997	66	16	15	97	57%	68%
2001	84	0	2	86	38%	98%
2003	107	6	4	118	43%	91%
2005	117	1	2	120	48%	97%
2007	129	11	3	142	55%	90%
2009	98	14	5	117	54%	84%

Rossi College has a catchment of four schools although Greenlaw, McKay and Morrison Schools only became full primaries in 1998. Like the previous two colleges, the statistics for Rossi College also show a (relatively) sudden change in enrolment patterns between 1997 and 2001. Having enrolled over half of the feeder schools' cohort in 1997, enrolments slumped to a third of the students from catchment schools in 2001, despite an increase in the number of available students. As noted earlier, Burton College was initially the main destination for students leaving the catchment, although from 2003 Ropata College has also been significant. Enrolment rates at Rossi College have climbed back towards their 1997 levels in the years following 2001 as fewer students from Avia Intermediate and Greenlaw School are enrolling out of the catchment. Few students from McKay School enrol at Rossi, and while more are enrolling from Morrison School, they are still in the minority.

For most years, the numbers of students coming from outside the catchment are so low that it would be difficult to argue that it is for a reason other than families' changing address. Nor has the college enrolled a significant number of Year Nine students from other parts of Denton, although this number has started to increase recently.

Table 4.31 Previous School of McKenna Year Nine Students, 1987-2009

	Catchment Schools	Other Denton Schools	Other Schools	**Total Yr9 Roll**	% Catchment on Roll	% Roll from Catchment
1997	215	46	0	260	81%	82%
2001	233	40	15	288	84%	81%
2003	238	36	13	287	88%	83%
2005	257	34	12	303	95%	85%
2007	253	40	17	310	93%	82%
2009	241	44	8	293	93%	82%

Like the Ropata catchment, McKenna College is fed by two schools, one of which is the adjacent intermediate. The proportion of Year Nine students seeking schooling elsewhere has fallen to less than one in ten while fewer than one in five students comes

from a school outside of the catchment. Schools within the Burton College catchment, particularly those located in higher socio-economic areas have consistently provided the majority of these students[15].

Table 4.32 Gain and Loss from School Catchments, 1997-2009

		1997	…	2001	2003	2005	2007	2009
Burton	Loss	-209		-140	-119	-132	-93	-94
	Gain	73		182	130	109	84	69
	Balance	*-136*		*42*	*11*	*-23*	*-9*	*-25*
Ropata	Loss	-13		-37	-22	-25	-22	-23
	Gain	63		25	62	60	47	44
	Balance	*50*		*-12*	*40*	*35*	*25*	*21*
Rossi	Loss	-53		-148	-156	-138	-115	-88
	Gain	33		2	11	3	15	21
	Balance	*-20*		*-146*	*-145*	*-135*	*-100*	*-67*
McKenna	Loss	-53		-49	-37	-15	-19	-21
	Gain	49		60	53	49	62	50
	Balance	*-4*		*11*	*16*	*34*	*43*	*29*

Table 4.32 represents the March Roll Return data in a different format by aggregating the data for previous schools that fall within each catchment and fall outside each catchment. The first row identifies the number of Year Nine students from catchment schools that are 'lost' to the local college when those students enrol in another secondary school. The 'gains' are those students enrolling from schools outside of the catchment with the balance then calculated from the two previous figures. If the default position is assumed to be one in which a school enrols all of the students from its catchment schools with none from elsewhere it would thus have a zero balance, ceteris paribus[16]. A balance that was positive would indicate that the school is attracting more enrolments from beyond its catchment schools that it is losing from within. A negative balance would indicate the reverse. Over time, these balances may reveal

[15] All but two of the full primary schools in the Burton catchment are decile 9 or 10. One is decile 2 and the other is decile 6. Together and on average they have provided less than 3 of 31 students from the catchment per year to McKenna College.

[16] For example, if no students changed address or there was no desire to enrol in a school other than the local one.

useful trends in the pattern of each school's enrolments and indicate how often families exercise choice in their selection of secondary school. While there will always be some movement due to families changing residential addresses, any imbalance that results from this is unlikely to be of any great significance and would cancel out in the long run unless there has been a substantial and sustained change in the number of school age residents within the area.

As table 4.32 shows, the experience of each of the schools is quite different. Relatively large numbers of students from the feeder schools for Rossi and Burton Colleges enrolled outside the respective catchments at the start of the period shown. For both schools there has been a substantial fall in these numbers. While in 2001 Burton College faced a spike in the number of students from non-catchment schools that has subsequently returned to a level consistent with 1997, Rossi College has only attracted a handful of these students, though the numbers have climbed since 2007. For Burton College, the balance between the two figures in recent years has established a rough equilibrium compared to the situation in 1997. The negative balance for Rossi College has fallen to approximately half the 2001 figure.

The numbers for Ropata College are on quite a different scale. It has maintained a relatively stable pattern of losing over 20 students from its two catchment schools since 2001. In that year, the loss was 50 percent greater and reflecting the large number of students enrolled at Burton College (see Appendix Two, Table 4F). The numbers of students coming from non-catchment schools has declined gradually but steadily since 2001 so that the balance, while still positive, is half the 2003 figure.

McKenna College has maintained a positive balance every year but 1997. The number of students from catchment schools enrolling elsewhere has halved while, with

the exception of 2007, the college has accepted a relatively consistent number of students from beyond the catchment.

While these statistics provide some insight into the dynamics of enrolments for each of the schools, they need to be put into context. Secondary school enrolments are subject to the upstream impact of enrolments in their respective catchment schools. For McKenna and Ropata Colleges this is likely to be more acute as each draws in-catchment students from an intermediate school and only one other school. Intermediate schools are in a similar position to their secondary cousins in that they have a catchment of contributing primary schools. If there are significant shifts in enrolments for an intermediate there are likely to be downstream consequences for the secondary school(s) they feed into. Table 4.33 provides the total number of Year Seven enrolments from 2001, while table 4.34 shows the 'gain and loss' statistics for the three intermediate schools. As above, this data comes from the March roll returns though data from 1997 was not available.

Table 4.33 Total Enrolments at Intermediate Schools in Denton, 2001-2009

	2001	2003	2005	2007	2009
Avia Intermediate	177	160	140	133	86
Aleni Intermediate	276	257	278	267	269
Braithwaite Intermediate	116	123	105	72	64

Table 4.34 Gain and Loss from Intermediate School Catchments, 2001-2009

		2001	2003	2005	2007	2009
Avia Intermediate	Loss	-22	-16	-17	-13	-29
	Gain	11	29	18	21	9
	Balance	*-11*	*13*	*1*	*7*	*20*
Aleni Intermediate	Loss	-1	-5	-1	0	0
	Gain	110	79	81	117	65
	Balance	109	74	80	117	65
Braithwaite Intermediate	Loss	-33	-21	-24	-41	-37
	Gain	11	19	16	10	14
	Balance	*-22*	*-2*	*-8*	*-31*	*-23*

Avia Intermediate is enrolling half the number of Year Seven students in 2009 that it was in 2001, with the greatest drop in the most recent year. There was a steady fall through the middle of the decade despite the net gain from its catchment schools. This suggests falling rolls for the contributing primary schools within the catchment and is backed up by the roll data from those schools (see Appendix Two, Table H). The implications of this trend for Rossi College are softened by enrolments from the three full primary schools within its catchment, two of which have experienced rising rolls.

For each of the other two schools, the patterns and implications are less equivocal. With the exception of 2009, Aleni Intermediate is attracting large numbers of Year Seven students from beyond its catchment schools while losing few if any from within. Given that its intake has remained relatively steady it appears that enrolments from outside of the catchment to some degree level out any fluctuations in local enrolments.

Braithwaite Intermediate is attracting more moderate numbers from schools outside the catchment while often losing three to four times that number from its feeder schools. Its intake of Year Seven students has fallen by 45 percent. The full primary school in the area has also lost about 40 percent of its roll since 2001, though only one of the contributing primary school has shrunk on a similar scale.

These statistics may also indicate the degree of transience amongst families in different neighbourhoods. Those from the relatively more affluent suburbs around McKenna College are less likely to change address as their economic situation is less likely to be unstable. Families are more likely to own their own homes than to rent, for example. This would tie in with the socio-economic data from the census and the deprivation index, and is examined in more detail in the next chapter.

Achievement Data

Can any connection between enrolment patterns and the academic performance of the schools in the market be detected in the data? As noted at the beginning of the chapter, critics of the neo-liberal reform of education claim a polarisation of schools that is evident not just in the ethnicity and socio-economic status of students but also in their academic performance.

The analysis of progress of each of the schools in external qualifications is complicated by the introduction of the National Certificate of Educational Achievement (NCEA), a new system of school qualifications. Nevertheless, some interesting patterns are revealed. Until 2002, Year 11 students sat School Certificate examinations as their first national qualification. Pass rates as a percentage of entries for each of the four schools (figure 4.2) show some annual variations but little discernable pattern or trend between 1992 and 2001. The only consistent feature of the data is that McKenna College maintains a thirty percentage-point advantage over the other three schools. Raw pass rates are a blunt instrument of analysis as they are dependent upon entries as the base of their calculation. The number of subjects entered by each student, the number of students not entered, and the year-level at which students attain a pass are unknown. However taking the number of passes as a percentage of the total school roll as shown in table 4.35 does reveal some discernable trends. The data for McKenna College again show relative consistency between 1992 and 2001 while there is a notable decline in achievement for Burton, Ropata and Rossi Colleges over the period. The trend for subject entries as a proportion of the school roll (table 4.36) shows a similar decline that reflects the inter-relationship of the two statistics. Whether this decline was the result of

school's screening entries, at the students' own instigation or some other reason, nevertheless achievement in external assessment declined in three of the four schools. This is in accord with the findings of Lauder et al (1999) and Fiske and Ladd (2000).

Figure 4.2: School Certificate Pass Rates, 1993-2001

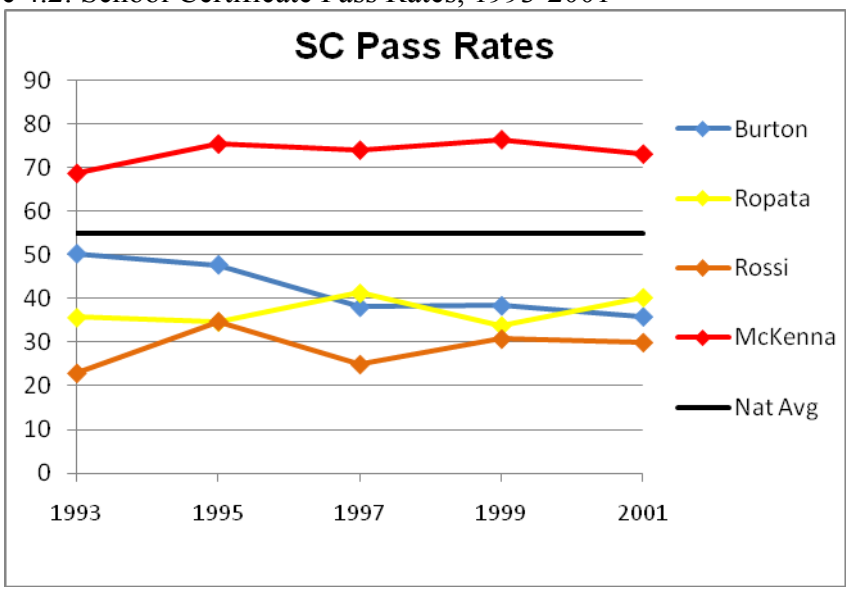


Table 4.35
SC Passes as a % of School Roll

	Burton	Ropata	Rossi	McKenna
1992*	43%	33%	18%	81%
1995	44%	36%	20%	88%
1997	35%	27%	12%	80%
1999	32%	20%	18%	80%
2001	21%	19%	13%	81%

Table 4.36
SC Entries as a % of School Roll

Burton	Ropata	Rossi	McKenna
96%	81%	81%	113%
91%	103%	58%	117%
92%	65%	48%	108%
84%	60%	58%	105%
59%	47%	44%	110%

*1992 data is produced here as no roll data was available for 1993

Figure 4.3: NCEA Level One Achievement, 2003-2009

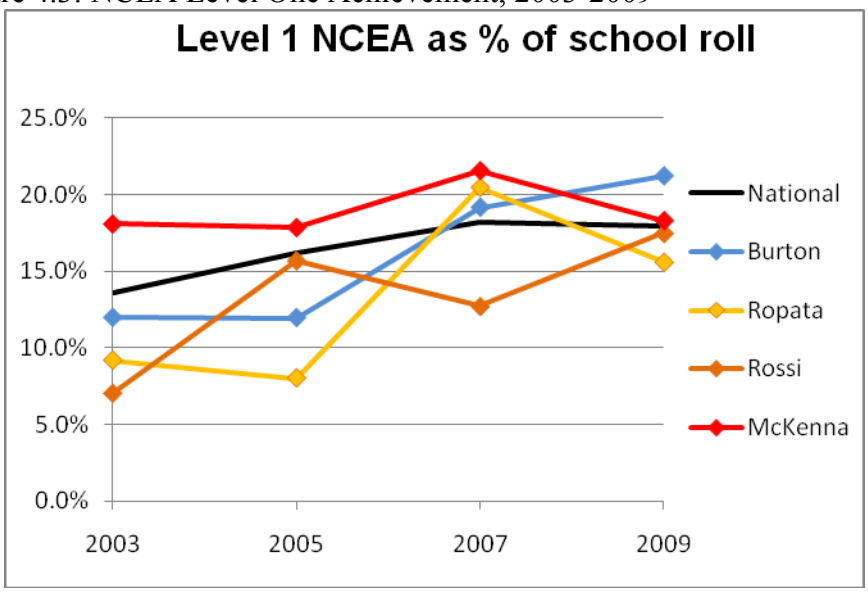


Table 4.37: NCEA Level One Achievement as a Percentage of School Roll

	Burton	Ropata	Rossi	McKenna	National
	%	%	%	%	%
2003	12.0%	9.2%	7.1%	18.1%	13.6%
2005	12.0%	8.0%	15.7%	17.9%	16.2%
2007	19.2%	20.5%	12.7%	21.6%	18.2%
2009	21.2%	15.6%	17.5%	18.3%	18.0%
%Δ'03-'09	77.2%	69.7%	148.0%	1.2%	31.9%

The data for Level One NCEA (which replaced School Certificate) shown in Figure 4.3 and Table 4.37 are not directly comparable to the previous data due to differences in the nature of the two assessment systems though the trends in annual achievement provide a useful basis for comparison. While McKenna College again shows relative consistency in its pass rates, Burton, Ropata and Rossi Colleges have raised their achievement levels to a significant degree. In addition, the speed at which this has happened is noticeably faster than the national trend and indicates that there may be a dynamic operating within the competition space that is not universally extant. The rate of success at Level One in Burton and Ropata Colleges has risen by two thirds

between 2003 and 2009, and at Rossi they have more than doubled. By 2009, achievement in this national qualification is on a par across all four high schools in the competition space. While not claiming that causality lies solely in the change in enrolment regulations, these trends are noteworthy sitting alongside the other data presented in this thesis because they show evidence of a reversal of the polarisation trend that coincides with the re-introduction of zoning.

Summary

The data in this chapter show that the secondary student population attending school in Denton start to fall from 1984 and that this fall accelerates after 1989. Ropata and Rossi Colleges in particular bear the brunt of these early falls while the Burton College roll grows, but by the middle of the nineties only McKenna is experiencing roll growth. There is evidence of polarisation around ethnic lines as European/Pakeha numbers dwindle from 1991. Burton College becomes progressively browner, at Ropata College the Maori population dominates roll numbers, and at Rossi College the majority of enrolled students are of Pacific Island ethnicity. At McKenna, meanwhile, change appears minimal. Year Nine enrolment data show the same trends, with retention of locally-schooled Year Eight students declining to a low of 56 percent in 1998/9. Furthermore, achievement data across the same period show that the trends in pass rates run in parallel to the trends in enrolment change. Both qualification entries and pass

rates decline as schools experience falling enrolments and polarisation of their student populations.

The situation changes from 2001 when roll numbers at all four schools begin to rise. Year Nine enrolments rise at a faster rate than total enrolments indicating that schools are attracting new students as well as retaining greater numbers. The analysis of the data about each school's catchment since 1997 shows also significantly fewer local students by-pass Rossi and Burton Colleges since the introduction of Burton's enrolment scheme in 2002. Ropata College experiences a similar though milder effect. Results in external qualifications also show a revival for these three schools. Performance rates in Level One of NCEA rise to be comparable to those of McKenna College. Ethnic polarisation, however, continues the trend that began in the previous decade. From 2001, enrolment of European/Pakeha students is consistently twenty to thirty percentage points lower than for the two other ethnic groups identified. By 2009, sixty percent of the Ropata College roll is Maori, seventy percent of Rossi College is Pacific Islands, and eighty percent of McKenna is European/Pakeha[17].

[17] At Rossi and McKenna Colleges the numbers of students identified as Asian (aggregated with Pakeha/European students for this study) have climbed to ten percent of the total school roll. Students of Asian origin make up five percent of the Burton roll.

Chapter Five: Demographic Data – Findings

This chapter makes use of census data and the New Zealand Index of Deprivation 2006 (NZDep2006). Census sourced data from Statistics New Zealand for 1986, 1991, 1996, 2001 and 2006 provide statistics on age and ethnicity of residents in Denton while NZDep2006 is a measure of socioeconomic deprivation and is also constructed from census data from 1991 to 2006. These data are relevant in that they provide the broader demographic context within which the trends identified in the preceding chapter occurred. For example, trends in the number of school-age residents will allow us to better assess the degree to which enrolment trends in local schools are the result of demographic change or some other factor. Selected data from Chapter Five will be reproduced where they are deemed relevant.

Census Data

Table 5.1 provides aggregate data for the area. The school-age resident population comprises those residents between five and nineteen years of age. As can be seen, the population of Denton has grown by approximately 3,800 since 1986 while the school-age population is two thousand fewer in 2006 than it was twenty years earlier. As a percentage of the total population, the school-age population has fallen by four

percentage points. The dip in the trends for both sets of data that occurs in 1996 is a pattern that is repeated in all the census data that follows for Denton[18].

Table 5.1 Total and School-Age Populations, 1986-2006

Population Change	Total Population	School-Age Population	% of Total Pop
1986	67194	20488	30.5
1991	68023	18449	27.1
1996	67913	17270	25.4
2001	69096	17902	25.9
2006	71032	18222	25.7

Table 5.2 Population Growth Rates by School Catchment, 1986-2006

Burton Catchment		Ropata Catchment		Rossi Catchment		McKenna Catchment	
Total Population	School-Age Population	Total Population	School-Age Population	Total Population	School-Age Population	Total Population	School-Age Population
29.6%	3.9%	-8.1%	-19.0%	-9.1%	-23.7%	5.9%	-3.2%

The degree of change in populations across the twenty year period for each catchment area (as defined in the previous chapter) is shown in table 5.2. Nearly all the population growth has been in the Burton College catchment where new housing developments were opening up while the Ropata and Rossi catchments have experienced a fall in total population. The greatest changes in the resident school-age population have been in the Ropata and Rossi catchments where student populations have fallen by between a fifth and a quarter. Burton is the only catchment to have a greater number of school-age residents in 2006 than in 1986. An analysis of the age group from which secondary school enrolees come shows a similar picture.

Tables 5.3 and 5.4 show the numbers and rate of change in residents in the 10-14 years of age band for each of the catchment areas. All catchments experienced a fall in numbers in the first decade with nearly forty-five percent of the total fall for the area occurring in the Rossi catchment. From 1996 to 2006 the numbers of 10-14 year-old

[18] This dip is not consistently evident in census data at either the regional or the national level.

residents grew in the Burton, McKenna and, to a lesser extent, Rossi catchments. They continued to fall, though more slowly, in the Ropata catchment.

A comparison of the trends between the first and second decades (see table 5.4) reinforces that the greatest change occurred within the group of suburbs surrounding Rossi College. In fact the change in the total population for the catchment coincides almost exactly with the change in the number of school-age residents[19]. Given the data above, it is evident that the broad demographic trends are in the same direction as the changes in secondary school enrolment numbers noted in the previous chapter, however the analysis that follows will reveal that enrolment trends were of a different order of magnitude to the demographic trends noted thus far.

Table 5.3 10-14 Year-Olds by School Catchment, 1986-2006

	Burton Catchment	Ropata Catchment	Rossi Catchment	McKenna Catchment
1986	2215	1145	2459	1431
1991	1812	908	1898	1221
1996	1792	956	1709	1145
2001	2091	973	1867	1338
2006	2063	928	1826	1427

Table 5.4 Periodic Change in 10-14 Year-Olds by School Catchment

	Burton Catchment		Ropata Catchment		Rossi Catchment		McKenna Catchment	
Δ1986-96	-423	-19%	-189	-17%	-750	-30%	-284	-20%
Δ1996-06	271	15%	-28	-3%	117	7%	282	25%
Δ1986-06	-152	-7%	-218	-19%	-633	-26%	-4	0%

There are two difficulties in aligning census and enrolment data. First, for the two census years of 1986 and 1996 no enrolment data is available. Two options were considered. First, enrolment data could be estimated using an average of the data from years on either side of the census year. This is possible for 1996 but the lack of data for

[19] There were 1857 fewer residents in the Rossi catchment in 1996 than in 1986 of which 1840 were of school-age. See Appendix Three, table A for the total resident and school-age populations by catchment.

1985 means that estimates of enrolment numbers for 1986 are based solely on 1987 figures. An alternative was to consistently use enrolment data from the year following the census. This latter method was adopted as it provides a complete set of data points for analysis. Second, the census classifies residents into five-year age bands which cannot be matched directly to secondary enrolment numbers. Most Year Nine enrolees in secondary school will be twelve to fourteen years old while the corresponding age band for the census is ten to fourteen. The Ministry of Education does, however, collect data on the ages of enrolled students so numbers of enrolled students between the ages of ten and fourteen in either primary or secondary schools within Denton could be compiled for use in this analysis.

Table 5.5 10-14 Year-Olds in Denton, 1986-2006

	10-14 year olds by census	10-14 year olds on school rolls	Differential	Rolls as a percentage of Census
1986	7249	5565	1684	77%
1991	5839	4621	1218	79%
1996	5602	4558	1044	81%
2001	6269	5040	1229	80%
2006	6245	4891	1354	78%

Note: Column Two data refers to the years 1987, 1992, 1997, 2002, 2007

Table 5.5 shows the collated data for 10-14 year olds by census and enrolled in schools in Denton. The proportion of residents locally enrolled remains highly consistent throughout the period, indicating that support for local schools as a whole has remained relatively unchanged since 1986 yet a closer examination of each catchment shows that the experience for each varies greatly.

Table 5.6 shows the changes for each catchment area. All numbers have been indexed to base year 1986 so that relative trends in enrolment numbers can be more

easily compared both to demographic change in the catchment and in Denton as a whole.

Table 5.6 10-14 Year-Olds by School Catchment, Indexed

		Burton Catchment		Ropata Catchment		Rossi Catchment		McKenna Catchment	
	Denton	by census	school rolls	by census	school rolls	by census	school rolls	by census	school rolls
1986	1000	1000	1000	1000	1000	1000	1000	1000	1000
1991	809	818	852	793	736	772	689	853	1027
1996	785	809	767	835	727	695	685	800	1119
2001	872	944	805	850	724	759	918	935	1194
2006	871	932	865	811	619	743	793	998	1202

Note: School Roll data refers to the years 1987, 1992, 1997, 2002, 2007

All catchments experience a fall in 10-14 year-old residents between 1986 and 1991 and only within the McKenna catchment is there sufficient growth over subsequent years to regain 1986 levels. Local enrolments also show a negative trend in all but the McKenna catchment. Within the Burton catchment local enrolments, although negative, initially hold up against the demographic trend but by 1996 have fallen behind. From 1996, enrolment growth has almost kept pace with the increase in numbers of 10-14 year-old residents without closing the gap. In the Ropata catchment, the number of 10-14 year-olds enrolled in local schools falls further and faster than the numbers of local residents in this age range. By 2006 10-14 year-old residents have fallen by less than 20 percent from 1986 levels while enrolments have fallen by 40 percent. In the suburbs surrounding Rossi College the number of both 10-14 year old residents and enrolments in local schools fall further between 1986 and 1991 than elsewhere in the wider region, but unlike in the Ropata catchment, recover to some extent after 1996. Enrolments by 10-14 year-olds in schools in the McKenna catchment show a steady upward trend in contrast to the falling numbers of resident 10-14 year-

olds, suggesting either an increased level of patronage from within the catchment or increasing numbers enrolling from outside the catchment. These trends in combination with the small positive change in patronage for the region shown in table 5.5 would suggest that an increasing proportion of those 10-14 year-olds resident in the Burton, Ropata and Rossi catchments were successfully enrolling in schools within the McKenna catchment by 1991. This is supported by the data in the following table.

Table 5.7 Enrolments of 10-14 Year-olds in Denton Schools as a Percentage of Census Population by Catchment, 1986-2006

	Burton Catchment	Ropata Catchment	Rossi Catchment	McKenna Catchment
1986	88%	88%	56%	88%
1991	91%	82%	50%	105%
1996	83%	76%	55%	122%
2001	75%	75%	67%	112%
2006	81%	67%	60%	105%

Table 5.7 shows enrolments by 10-14 year-olds in local schools as a proportion of the resident 10-14 year-old population by census. In 1986 the Rossi catchment is notable for having a significantly lower proportion of enrolments to population whilst all other catchments sit at 88 percent. After an initial fall in 1991, a greater proportion of local 10-14 year-olds enroll in Rossi catchment schools. The trend in enrolments within the Burton catchment has been relatively unstable in relation to the available population. An initial small gain from 1986 to 1991 is followed by a decade of falls before some recovery in 2006. In the Ropata catchment an increasing proportion of local 10-14 year-olds have sought enrolment in schools outside the catchment throughout the twenty year period. The data for the McKenna catchment indicates that while increasing numbers of 10-14 year-olds are enrolling from outside the catchment in the nineties, these numbers were steadily declining in the last decade.

Ethnic Change

Census categories for ethnicity are combined to produce a set of data comparable to that used in the previous chapter. Maori and Pacific Island data sets are kept intact while all other groups are combined under the title 'European and Other'. The data in table 5.8 show that there have been subtle changes in ethnic composition within the Burton and McKenna catchments since 1986 with the proportion of both Maori and Pacific Island residents increasing by between two and four percentage points. A more noticeable change has occurred within the Ropata catchment as the proportion of Maori and Pacific Island residents increases by seven points and six points respectively. For all three catchments the trends have been reasonably steady and unidirectional. The change in ethnic composition within the Rossi catchment has been less consistent, but over the period as a whole the proportion of European and Other and Maori residents has fallen as Pacific Island residents have risen from a third to nearly half of the

Table 5.8 Census Population by School Catchment and Ethnicity, 1986-2006

	Burton Catchment			Ropata Catchment			Rossi Catchment			McKenna Catchment		
	European and Other	Maori Ethnic Group	Pacific Peoples' Ethnic Groups	European and Other	Maori Ethnic Group	Pacific Peoples' Ethnic Groups	European and Other	Maori Ethnic Group	Pacific Peoples' Ethnic Groups	European and Other	Maori Ethnic Group	Pacific Peoples' Ethnic Groups
1986	87%	7%	6%	71%	21%	8%	39%	27%	34%	91%	6%	2%
1991	86%	8%	6%	65%	24%	10%	32%	24%	43%	88%	7%	5%
1996	84%	9%	7%	61%	27%	12%	44%	19%	38%	87%	8%	5%
2001	83%	10%	8%	58%	29%	13%	30%	21%	49%	87%	8%	5%
2006	82%	10%	8%	58%	28%	14%	31%	21%	49%	85%	9%	6%

Table 5.9 Percentage of Census Population by School Catchment and Ethnicity, 1986-2006

	Burton College			Ropata College			Rossi College			McKenna College		
	European/ Pakeha	Maori	Pacific Islands	European/ Pakeha	Maori	Pacific Islands	European/ Pakeha	Maori	Pacific Islands	European/ Pakeha	Maori	Pacific Islands
1987	88%	12%		68%	32%		73%	27%		94%	6%	
1992	56%	21%	24%	51%	29%	21%	4%	27%	69%	86%	8%	6%
1997	44%	25%	31%	26%	51%	23%	10%	17%	73%	85%	8%	7%
2002	40%	27%	33%	22%	54%	24%	13%	22%	65%	85%	8%	6%
2007	47%	26%	27%	14%	65%	21%	10%	21%	69%	82%	10%	8%

Note: numbers of Pacific Island students were not surveyed prior to 1991

population. The contrast is stark between the ethnic composition of each community and the ethnic profile of the secondary schools within each of them. Selected data from tables 5.8, 5.10, 5.12, and 5.14 have been reproduced in table 5.9 below.

In 1987 the ethnic profile of students at each of the four schools corresponds reasonably closely with 1986 census data for their respective communities. The proportion of Maori students at Burton and Ropata Colleges are respectively seventy and fifty percent higher than their communities, but the lack of data on students of Pacific Island ethnicity limits the extent to which any further conclusions can be drawn. While it can be observed that from 1992 onwards Burton, Ropata and Rossi have markedly higher proportions of Maori and Pacific Island students than can be accounted for by the demographic profile of their respective communities, it can neither be claimed nor discounted that this pattern is a continuation of that found in 1987. There is a definite pattern of decline in the statistics for European/Pakeha students at both Burton and Ropata Colleges from 1992 to 2007 that is greater than the demographic decline in each catchment, and at Ropata the increase in the proportion of Maori students is far greater than that of the local demographic.

Socioeconomic Change

The NZDep2006 uses census data on nine variables[20] to construct a measure of deprivation that provides an indexed score for each meshblock in New Zealand. The greater the score, the greater the level of deprivation found within the meshblock. These scores are further used to derive a decile ranking where 1 represents the least deprived and 10 the most deprived. The NZDep2006 provides data at meshblock and area unit

[20] See Appendix Three, table B

level. For a larger regions a population-weighted average score must be calculated by multiplying individual area unit scores by their population, adding them all together, and then dividing this total by the total population for the region (Salmond, Crampton, & Atkinson, 2007) as shown by the following formula.

$$Weighted\ average = \frac{\Sigma(NZDep\ AU\ Score)\ x\ (AU\ population)}{\Sigma\ AU\ populations}$$

This process was used to calculate the values in table 5.10, below. While the authors of NZDep2006 caution against comparisons of meshblocks and "interpreting small changes over time as being practically meaningful" (Salmond, et al., 2007), they acknowledge that comparisons of aggregated areas such as Census Area Units (the basis of this analysis) are reasonable.

Table 5.10 Deprivation Scores by Catchment, 1991-2006

	Burton Catchment	Ropata Catchment	Rossi Catchment	McKenna Catchment
1991	907	1074	1184	893
1996	917	1090	1214	933
2001	919	1071	1203	940
2006	925	1080	1177	946

The average weighted scores shown in table 5.10 show some small shifts in the relative level of deprivation within each catchment over the fifteen year period covered but not of a scale to indicate that there has been significant socioeconomic change within any of the catchments as a whole. The weighted average scores for the Burton and McKenna catchments consistently place them below the thirtieth and fortieth percentiles respectively for deprivation. The scores for the Ropata and Rossi catchments are consistently above the eightieth and ninetieth percentiles respectively[21]. For a

[21] Score distributions for the deprivation indexes are presented in Appendix Three, table C

greater level of detail, the graphs below show the distribution of census area units within each catchment across the deciles for each of the four deprivation indexes. The Burton catchment predominantly contains area units that score in the bottom ten percent for deprivation (decile 1) while the area units within the Ropata and Rossi catchments are mainly scoring in the top ten percent for deprivation (decile 10). Census area units in

Figure 5.1

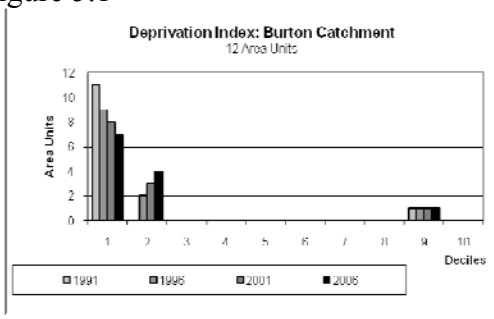


Figure 5.2

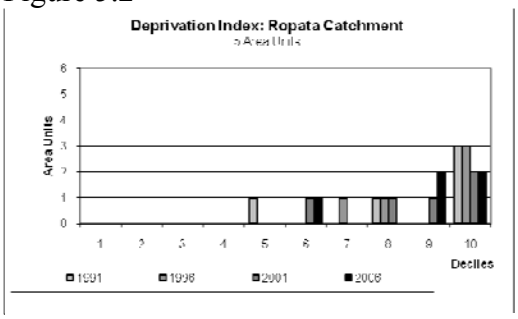


Figure 5.3

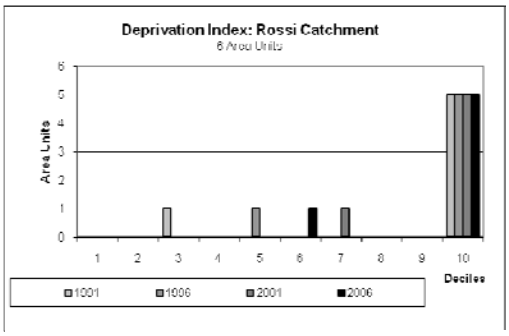
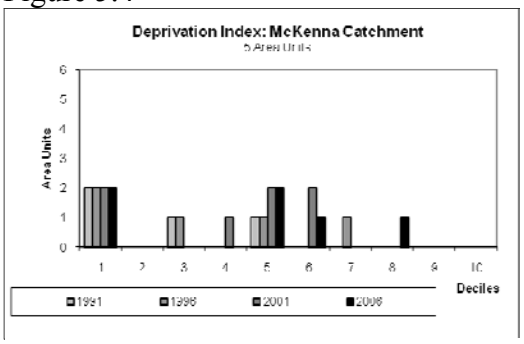


Figure 5.4



the McKenna catchment show a wider range of scores though are relatively less deprived in general. What is clear in these graphs is both that socioeconomic inequalities are highly geographically polarised in the greater Denton and that this situation has changed little since 1991.

While there appears to have been little change in the socioeconomic profile of each school's catchment area, there is a contrast to be made with the decile ranking

given each school by the Ministry of Education for funding purposes[22]. Table 5.11 presents the deciles for the four secondary schools from 1999 to 2009 where decile 1 represents the ten percent of schools with the highest proportion of students from low socioeconomic neighbourhoods. The Ministry of Education was unable to provide further data prior to 1998. Ropata and Rossi Colleges have deciles that correspond closely to those of the NZDep2006. In contrast, the decile ranking for Burton College from 1999 to 2003 is at the opposite end of the scale to those of the suburbs within its catchment. Despite being surrounded by some of the least deprived neighbourhoods in the country, a greater number of the students who attended the school in this period came from the most deprived neighbourhoods. The school's decile ranking began to lift from 2005, but at decile 5 is still not fully representative of the catchment as a whole. McKenna College, on the other hand, has had the opposite experience with a decile ranking that indicates that more students come from higher socioeconomic neighbourhoods than are represented in the McKenna catchment. Having noted earlier that McKenna College is enrolling a significant proportion of students from beyond its catchment, it could be concluded that the majority of these students come from very high socioeconomic neighbourhoods.

Table 5.11 Ministry of Education Decile Scores

	Burton College	Ropata College	Rossi College	McKenna College
1999	2	2	1	9
2001	2	2	1	9
2003	2	2	1	9
2005	3	2	1	10
2007	3	2	1	10
2009	5	2	1	9

[22] The Ministry of Education calculates each school's decile ranking by using census information on five socioeconomic indicators for the meshblocks from which enrolled students come. Deciles are reviewed following each census or on request from the school. Four of the five socioeconomic indicators used by the Ministry are in common to the Deprivation Index.

Summary

Census data indicates that while falling school enrolments in Denton as a whole can be attributed to demographic change, it is an inadequate explanation for the experience of the individual secondary schools. Since 1987, Ropata and Rossi Colleges suffered falls in their enrolments significantly greater than the population change in their surrounding suburbs. Ropata and Burton Colleges had increasingly brown student populations that were not matched by local residential change. McKenna College enrolments increased despite a negative change in the catchment population. Similarly, these trends cannot be attributed to a change in local socioeconomic circumstances as socioeconomic indicators have been clearly consistent across the period, though the disparity between school deciles and measures of local socioeconomic deprivation is noteworthy. Interestingly, the data in table 5.7 indicates that McKenna College does not appear to be any better supported by local residents than Burton or Ropata Colleges prior to the changes ushered in by Tomorrow's Schools.

Chapter Six - Interviews

Seven principals were interviewed in order to shed light on what was occurring within and between the four secondary schools over the period under study. Such qualitative data serves to provide additional evidence to compliment the quantitative data of the last two chapters. As Woolley (2009) describes it, "the quantitative approach is characteristically indirect and reductive, the qualitative approach is characteristically direct and holistic" (p. 8). By identifying points of convergence and divergence between the two approaches a more complete understanding of the situation faced by schools may be reached. In particular, an insight into the perceptions of leading participants is sought with regard to the causes and impacts of enrolment change.

Three of the principals (named B, D and F) currently lead the secondary schools within the competition space and three (Principals A, C and E) are past principals who served during the period of interest. The seventh (Principal G) has worked in schools in Denton for over two decades, first as a deputy principal in one school and currently as principal of another nearby school. One of the current principals gained the position through promotion from deputy principal, extending the period of his/her experience in the school. Four other past principals were approached but were either unavailable or failed to respond to the invitation to participate. At the time of interviewing, one current

principal who had held the position for just over twelve months and came from outside of the region was not approached. All bar one of those interviewed had had ten or more years working in one of the four high schools, some holding positions as teachers or in middle- or senior-management at some time prior their appointment as principal.

The participants were asked a series of questions designed to gather data on:

- how the Year Nine student profile changed during their tenure (for example: numbers, gender mix, ethnicity, etc),
- what they perceived to be the principal causes of these changes,
- how these changes impacted on the school,
- how the school and other educational agencies responded to the changes.

The precise questions asked of each interviewee were tailored according to when they had served in their respective schools. Upon analysis, their responses revealed several common experiences, opinions, and attitudes as well as some instances of different and opposing viewpoints. These are set out on thematic lines along with selected illustrative quotes.

Tomorrow's Schools

"*There was a whole political background…, parents should have choice,… some schools weren't as good as others…and the general feeling was if you wanted to be socially mobile [and] if you wanted your children to get a better chance in life you needed to move them somewhere else.*" Principal G

All seven interviewees held similar views on the impacts that the Tomorrow's Schools reforms had had, both on their school specifically and on the educational

environment in Denton. The rapid negative change in enrolment numbers experienced by three of the high schools were the result of an environment in which the public discourse actively encouraged parents to question the quality of the education available at the local school, with the subtext that it was inferior to that being offered further afield. While these views had been in the public domain for some time beforehand, the changes to regulations governing enrolment zones that came into effect at the start of the nineties were identified by principals C, E and G as the start of changes in enrolment patterns in the area. Principals A and F noted similar trends in the schools in which they were working at the time.

> "*So [the schools] were all roughly the same size, and people went, pretty much, to their local schools. But as zoning went, people drifted into all sorts of other schools*" Principal A

The interviewees identified two factors in particular that influenced parent decision-making. First, the newly introduced decile ranking of schools quickly became associated with school performance in external qualifications and became a default measure of the quality of education delivery. This labelling proved to be damaging for those schools drawing on communities with lower socio-economic levels.

> "*Lower decile schools were not expected to do as well*" Principal G

> "*Zoning was removed and these particular schools have something in common, called low decile, and lots of students left*" Principal D

The second factor was the ethnic composition of the student body in any one school. Those who were making choices in enrolment were heavily influenced by the public perception of a school's ethnic profile. Enrolment patterns polarised around

ethnicity in the first years, but then mutated into a second reactive trend as the education environment in the area evolved.

"…*white flight from Rossi…[was then] followed by brown flight*" Principal B

"*The European [student] population virtually disappeared altogether*"
Principal G

"*It went right across to 97% Polynesian, and of that 20%-odd were Maori*"
Principal C

"*There was the feeling that, I suppose it smacks a little of racism, in terms of the browner the school the lesser the results*" Principal B

"*Any school which had a bigger white population than the other ones in Denton tended to get more Polynesians going there because the families assumed that if the whiteys were going there it was a better school.*" Principal C

This last statement refers to how new migrant families arrived, and in this locality they were mainly from the Pacific Islands, both seeking better opportunities for their children and ignorant of the dynamic that had created the situation within which they found themselves.

There is certainly little debate that McKenna College was perceived to be in the strongest position of all the high schools in the area to deal with the new environment. As a middle-class school with a significantly higher proportion of European/Pakeha students on its roll it was pushed into the position of power in Denton whether it was wanted or not.

"*The main pressure was for us to accept people from beyond [the existing zone]… But, our view was well, how the hang do we think we can teach those kids better*

than they can teach them there? … We were in the position of power. There's no arguing that" Principal E

"*While we accepted some kids out of zone, we kept the roll to… just over 1100*[23] *when I came and it was about 1300 when I left 13 years later. So it was gradual creep… Nobody would be served by the closure of a school in Denton. That the community in which that school's set would suffer badly.*"

Principal E

"*In terms of the people able to make choices for their children's future, choosing McKenna above the schools in Denton, and yet it's only four, eight k away, or whatever. It's the natural place. But when it had a maximum, our rolls were not so badly affected.*" Principal B

Where school rolls were falling the impacts on staffing were immediate and morale-destroying for those who had to administer the process, for those who lost their jobs and for those left behind.

"*But then suddenly, about 1991, there was this huge fall off in the roll, and lots of redundancies. I'm sure it had a bad effect on [the previous principal], but it's very hard sitting in a school and dismissing eight or ten teachers a year."*

Principal C

"*It hit the staff…there were teachers who had gone there and were committed to that kind of school and some of them had been there for quite a long time.*"

Principal C

[23] All roll related numbers quoted in this chapter have been altered as per previous chapters.

"*[Rossi College's] senior management reduced significantly…[from] four deputy principals,… it came down to a principal, and… two deputy principals…, and eventually it came down to one deputy principal and one assistant.*" Principal G

"[Once] you're below about sort of 500, it's really hard to get the range of subjects in" Principal A

The Competitive Environment, 1990 to 2002

"*Choice and market forces, power to principals. Those were the sorts of issues that just made life one continual battle.*" Principal E

The new environment of Tomorrow's Schools created new pressures for principals to deal with, not least in the way the model was set to change the relationship between local schools into one of competition. As a group, the principals of the four high schools attempted to avoid any overt competition between the schools and acknowledged that the potential consequences were not in the community's best interests. Often, however, their educational ideals came up hard against the realities of school leadership in a difficult climate. Individually, each had their own view of the true nature of the relationship between the schools.

"*We all had a pretty shared understanding that we didn't want any school in… Denton to collapse, so… we used to meet regularly… and there was an agreement that we would never… do another school down*." Principal A

"*Our view was… that nobody would be served by the closure of a school in Denton. That the community in which that school's set would suffer badly.*" Principal E

"*And, of course, we used to meet… on a regular basis to chew the fat about things. We would agree on a date for enrolments. We would agree to publish all the bits and pieces jointly, in a joint advertisement in the local rag*" Principal E

"*…principals work cooperatively but there is also that understanding that the bigger the school is, the more that you have within the school.*" Principal B

"*We'd pretend we were cooperating but we'd all be quite competitive and suddenly we'd have to publicly espouse cooperation and mateship and good ethics…And you were forced into that position. I'm sure we all started out with our professional ethics but when it comes down to seeing another colleague down the road at the end of the year, you start to manipulate things.*" Principal C

How the high schools marketed themselves is the main way in which competition was manifested. An informal agreement between principals set boundaries around where schools would market and what techniques were acceptable. To some degree the traditional 'home zones' of feeder schools and suburbs for each school were preserved, limiting the acceptable marketing activities to more passive forms. It was acceptable for a high school to provide prospectuses and enrolment forms to primary schools with a history of enrolments, widely advertise open-days or evenings, seek publicity through local news media. It was considered bad form to directly approach students or families in another's 'patch'. The informality of the agreement left definitions of the various boundaries rather blurred and open to different interpretations. While some principals saw that value was to be had from marketing, others simply saw the opportunity cost.

"*We would have an enrolment evening for parents to come along. I would take enrolment forms, enrolment books to the schools from which kids came in Denton. If we had a history of kids coming from whatever school it was we would take this.*"

Principal E

"*There was a little bit from Burton College in the middle nineties where the [former principal] …did an MBA in marketing or some sort of management, and I think he used that and did his research into his own propaganda-type stuff. … And it was a very successful… and there was letterbox drops.*" Principal B

"*The year before I got there, they'd done some stuff that we didn't feel good, that I didn't feel good about. They'd done letter box drops throughout the whole of the area, … and we stopped doing that. We just took prospectuses to the contributing schools and that's all we did.*" Principal A

"*[I was] reluctant to spend dollars on advertising when, a pretty ordinary budget of $10,000 for advertising buys half a teacher aide that makes a difference in learning. So, I've been reluctant to generate, or put money into advertising in order to capture more children when it's actually impacting on the children here.*"Principal B

Competitive activity was also initiated by schools from further afield. In at least one case it was put down to a desire to fill places in a school that in turn had lost enrolments to a neighbouring high school. In other instances there appeared to the interviewees to be cherry picking of academic and sporting talent from the area.

"*Piper put on a bus one year, so they would meet kids at the train station and bus them down to the school. I mean one year, I can't remember when it was, Raynor put a bus on from Braithwaite and that stripped Ropata.*" Principal A

"*When [Piper] came down, I seem to remember newspaper advertisements, I seem to remember they were visiting the feeder schools, and … they did put some buses on…*" Principal G

"*There were times when …the sporting thing has been a point of contention… Even these days, you will find the representatives of certain schools are always out here at the rugby and league trials and they watch the talent.*" Principal G

Innovation and Change

"*[If] you look like an English grammar school, then you're a good school in New Zealand. And so, if you look at the uniforms as well: Chilton St James and Epsom Girls' and Auckland Girls', they dress their children in Edwardian clothing. So you have to ask, why does the middle class in New Zealand want an English grammar school?*" Principal D

One of the advocated benefits of the education reforms was that schools would adopt innovation in practice and there would be greater diversity as schools attempted to carve a niche for themselves in the market (S Gorard & Fitz, 1998; Le Grand, 1991; Levin, 1997). One common *post hoc* criticism of the reforms was that schools instead became less diverse and more conservative in their practice (Cobb & Glass, 2009; Glatter, 2004; Levačić, 2001; Lubienski, 2006; Wylie, 2006). The above quote

encapsulates some of the frustration felt by school leaders whose educational vision was constrained by the circumstances in which their schools operated. New initiatives and programmes are either 'external', generated by agencies outside of the school such as those of central government, or 'internal' from within the school, though they may still involve engagement with agencies or funding from outside the school. The interview material shows that during the nineties, the three schools that experienced falling rolls had neither the resources nor the mandate from their communities to experiment with new curriculum delivery. Instead, they were identified at the time as being in need of significant assistance from external agencies.

> "*We had to double up [classes] to keep certain things going. The other thing was the community and what it wanted, it was actually very traditional in that they wanted their kids to succeed in the subjects that they saw other schools succeed in. There was always demand for a very traditional curriculum. We introduced some of the NCEA school-based things. But it was a fairly up hill battle to get them accepted.*" Principal C

> "*We had the [local programme[24]] and the Ministry's Schools Improvement Project which really did make a difference to what was happening in the schools*" Principal B

> "*There was a lot of resourcing that went in terms of staff development and all sorts of things. In the early years it was tough work.*" Principal G

Innovation in curriculum programmes and other school initiatives that originated internally occurred most often when schools (and principals) were in a more stable

[24] This was a centrally-funded, locally based programme that developed a continuity of approach from primary schools through to secondary. Its aim was to raise achievement through a focus on literacy.

situation, and an element of stability was found when Burton College introduced an enrolment zone in 2002.

> "*So [having the zone] did change the dynamic. It let us offer different courses. We'd experiment a lot more I think. We experimented with options, we experimented with different ways of approaching things … If we didn't have the zone, we couldn't have planned it. Having, having some control over the numbers was huge.*" Principal A

> "*We've got a couple of little schemes that we have that we use… that's designed for those people that have not had much success… I think we've given a lot of PD to behaviour management. A lot of PD into making learning accessible for students. A lot of PD in terms of engaging students.*" Principal B

A New Enrolment Zone, 2002 to the present

At the beginning of the 2001 school year, a hundred or so[25] previously unenrolled students turned up at Burton College. When the new principal started a few months later one of their first tasks was to write to the Ministry of Education to begin the process for introducing an enrolment scheme. The establishment of a home zone for Burton College in 2002 was identified by three of the principals of the time as marking a change in the secondary school environment in Denton. While not a magic bullet, the work done to more firmly establish Burton College as the high school serving the Thompson Vale

[25] While the principal concerned stated that the number was about 100, the Year Nine intake in 2001 was approximately fifty more than either of the previous two years. While it was not unusual at the time for a sizeable number of students to turn up on the first day of school not having pre-enrolled, in 2001 this number seems to have doubled.

suburbs has had flow-on effects to the other schools in the area. There is greater incentive for parents to enrol students at the appropriate time and less opportunity for parents to move their children between the schools without good reason.

"*We got the zone put in place and the fear was that we would take the cream off the other schools, and that was never the plan. The plan was that actually that we could mange our enrolments that we could have x number of kids and that we would know how many we would get and we'd go from there… The zone was put in partly to manage the growth, which was the big driver.*" Principal A

"*When [Principal A] took over there, she did a lot of work in Thompson Vale and Scott Bay and did it very successfully, and reintroduced the zone… And for Denton as a whole, that's a good thing, because that's what [Burton] was set up for, to serve that area, and it wasn't serving that area. And that had a flow-on effect down. So that's been a good thing.*" Principal G

"*[The Rossi principal's] attitude to me was 'we want you to get more of the kids from Thompson Vale, we want the kids to stop leaving Thompson Vale and going into other schools because then you wont take as many kids from us'*" Principal A

"*We have a zone here by default, basically. Burton College has a zone. Because of the all the work that's been done at Rossi College in terms of the new buildings, [which] have got much less capacity…, so they've had to restrict their zone. And therefore we must have the remainder that's out there.*"

Principal B

For one principal, the issues are far broader and deeper than the impact of enrolment regulations and parental choice on their school. It is the quality of the public discourse on education and the way it has been hijacked by a middle-class agenda.

> "*The re-introduction of zoning… what that does is to say, 'Well, we're a gated community now and we're going to exclude anyone who wants to come in to our precious place who doesn't live within the gated community'. All it does is make the schools with zoning schemes more valuable. So why would it protect a school like this?*" Principal D

Similar reservations were felt at Burton College:

> "*We had staff meetings to talk about whether we should be zoning. There was a lot of concern about that, you know, were we setting ourselves up as an elite school and what do we want to achieve?*" Principal A

The increase in the size of McKenna College in recent years attracted comment. For the current principal it is a pragmatic matter that the economies of scale that can be achieved by a larger school offer greater collective benefits for the students at that school. In addition, the ballot can be used to top up numbers when the local demographic changes unfavourably.

> "*In about 2003 and 2004 we took very few from outside of zone, but so that we could maintain a roll and maintain some sort of relationship with schools [beyond our zone] which are traditionally areas that fed into us, we did take extra, because we felt that if we took no one, we'd probably lose them for good and we knew that*

rolls in the McKenna area were declining… So I think we made a strategic decision to take a few more.

The advantages are the fact that it's economies of scale – the bigger the school, the more options and lines you can give, the more opportunities for students to come."

Principal F

The principals of the other secondary schools in Denton whose student roll numbers have not been as robust put a different interpretation on these trends, though their comments are relatively reserved.

"*I suppose also, another factor was that in the middle nineties, I think when [Principal E] was at McKenna they had a maximum roll I think at 1100 students? Currently they've got 1500. Now, there's 400 students that probably weren't generated just from McKenna… It seems to be it crept up to the maximum and then you've got more demand and therefore you make a case for more buildings so your roll goes up.*" Principal B

"*Given there's supposed to be an enrolment zone and given there's supposed to be balloting and all the rest of it. But of course their maximum rolls have been increased. The maximum roll of McKenna College has gone up by about 500*."

Principal G

"*Demographically, there was a period where places like McKenna College had to increase their facilities to meet their local demographic, but of course, once the local demographic went down they then had all this extra space to put in outside people. And they've done that, and they seem to be doing it even more.*"

Principal G

Although six of the seven interviewees were generally positive about the re-introduction of home zones and balloting, most were qualified in their support. Three noted that the ballot was at least impartial and so fairer than the process that had preceded it.

"*It meant that we were able to manage the growth that was the first big difference. And it meant that we were pretty secure in our roll each year, so we could staff with confidence.*" Principal A

"*It's transparent and it's fair. I had three kids that I was desperate to get into this school from out of zone and I think they were 78th, 80th and 82nd on the ballot, so none of them are coming.*" Principal F

Two noted a broader concern about how change in roll sizes were managed, pointing out that while increases were encouraged (new buildings, staffing, etc) and falls penalised, the ballot could be used by some schools to avoid the latter.

"*I'm trying to basically maintain it at the level it is now, because [otherwise] you've got real staffing issues that are related to rolls.*" Principal F

"*I think one of the aspects that is frustrating is… if a school's local demographic changes and they need increased facilities, it's fine. But then when the demographic changes back, there is nothing in place for them to reduce the facilities or reduce their maximum roll. They always just keep increasing and they've got the capacity and if there is demand because of other features like perception, decile rating, all that sort of thing, then they have the capacity to just fill those buildings again…*"Principal G

Summary

The majority of the principals who were interviewed favour the current set of enrolment regulations over those that operated in the 1990s. In those years following the initial reforms parents were seen as reacting to fears informed by (mis)perceptions about decile ranking, ethnicity and socioeconomic level of schools. The period is characterised in three schools by rapid changes in both numbers and ethnicity of enrolments, confirming the trends noted earlier in the quantitative data. The ensuing teacher job losses and reduced capability for both curricula and co-curricula delivery are noted as the necessary corollary to these shifts. While only one principal (not interviewed) of the era bucked attempts to minimise overt competition, many had difficulty balancing the demands of protecting their school and staff with their personal philosophies of education. Competitive pressures and parental preference for conservatism in education tended to stifle rather than encourage innovation in educational practice.

The principals identified the change in enrolment regulations, and particularly the introduction of an enrolment scheme for Burton College, as the ushering in an era of relative stability for three of the schools. Changing trends in enrolments shown in Chapter Four is supported by the perception that greater certainty in enrolments for Burton College has, to some extent, flowed on through to Rossi and Ropata Colleges as well. There is also the view that this stability provides an environment of reduced risk within which new programmes and practices can be introduced. Although many of the principals also had reservations – notably the exclusive nature of enrolment schemes and recent roll growth at McKenna College - the general consensus is that the greater

stability and predictability in roll numbers now allows schools and their principals to focus in a more positive way on educational issues and less on reacting to external threats.

Chapter Seven: Discussion and Conclusion

In his Reith Lectures of 2009, Sandel questions the role of markets in our society. Are market incentives the type of incentives we always want? And, do they produce the outcomes we are seeking(Sandel, 2009)? In education, the second question in particular is at the core of the debate about the Tomorrow's Schools reforms. Are the incentives prompted by educational quasi-markets engendering outcomes that we as a society want from our education system? A core principle of the quasi-market is free parental choice of school, thus elevating in importance the part played by enrolment regulations, particularly those relating to geographic zones. This thesis provides an update of the school choice debate in New Zealand, investigating the extent to which impacts identified as outcomes of the reform process by Smithfield and other studies have continued or reversed since the change in enrolment regulations in 2000.

"*My question to Lockwood Smith was, 'Do you see schools as competing firms or do you see them as branches of the same company?*"" Principal E

Advocates of school choice generally base their case on two arguments, economic and ideological (each separate though overlapping). The economic argument is built around the concepts of the free market and resource efficiency. The former states that

the free and open marketplace best meets a society's desires via consumer sovereignty and competition. Consumer sovereignty in education is largely dependent upon location and income to empower free choice. For many living outside of the main centres, a choice of state schools is not practicable. For many who do have a choice, that choice is restricted to two or three possibilities of schools that may or may not be different in any ways that can be substantiated. The market model assumes the ability of competing firms to respond to changing market conditions in order to maximize returns. As noted by Adnett and Davies (1999), Levacic (2001), Levin (1997), Lubienski (2007) and others, in state-funded education the degree of freedom given to schools is compromised by regulatory compliance, and profit-seeking is not the dominant motivation.

The economic implications of geographic enrolment zones, on the other hand are primarily practical rather than ideological. The Smithfield study found that enrolment zones help prop up the rolls of less popular neighbouring schools. In a situation where the price mechanism is inoperable they provide an alternative for rationing scarce economic resources while also supporting the government's financial interest in existing plant and property, particularly in under-subscribed schools. On the other hand, over-subscribed schools are likely to be discouraged from expansion as this may undermine their competitive advantage. Selection by house price appears to be less polarising of the school population than the alternatives that operated in the 1990s and provides for a more diverse student body within each school.

The quantitative data presented in Chapter Four supports previous findings that the school choice policies of the nineties provided an environment in which student communities within Denton became increasingly polarised along ethnic lines, and in which two of the schools quickly entered spirals of decline. Ministry of Education roll return data clearly show Burton, Ropata and Rossi Colleges each suffer varying degrees of white flight between 1991 and 2001. By the turn of the century, Maori comprise over half of the Ropata College roll, Pacific Island students make up over seventy percent of the Rossi College roll, and at Burton College the roll is divided roughly equally between European/Pakeha, Maori and Pacific Island students. The same data sources also reveal the sudden and rapid negative change Ropata and Rossi Colleges suffer in their enrolment trends that coincides with the implementation of the Tomorrow's Schools programme of policies. More telling than total student numbers, which are impacted as much by leaving as entry rates, are enrolments of those entering their first year of secondary school. In 1995, following six years of almost continuous falls, the Year Nine intake for Ropata College is 41.7 percent of their 1989 intake, while at Rossi College 67.3 percent fewer students enrol (see table 4.15). On the other hand, the Burton College intake of Year Nines follows no clear trend, at times rising or falling by as much two or three class-loads of students. The McKenna College roll, in contrast to the other colleges, appears largely unaffected by the administrative and structural changes wrought at the start of the decade. When set within the context of the census data presented in Chapter Five, it is plain that demographic change can account for only a small part of these shifts.

From 1991, students (and/or their families) are more actively choosing to avoid their local secondary school than had previously occured. McKenna College provides

two particularly compelling pieces of evidence of this new dynamic in school enrolments. First, the only period in which the McKenna College intake of Year Nine students falls in line with the local demographic is prior to the lifting of enrolment restrictions (see tables 4.15 and 6.3). Second, enrolments of ten to fourteen year-olds in McKenna catchment schools in 1996 peaks at 122 percent of the resident age group while rates within each of the other catchments are well below 100 percent (table 6.7). Keep in mind that the proportion of local ten to fourteen year-olds enrolling in local schools varies by no more than four percentage points from 1986 through to 2006. As noted in Chapter Five, prior to the introduction of the education reforms McKenna College is no better supported by its local community than Burton or Ropata Colleges.

The trends for achievement in external assessment show further support for the hypothesis of spirals of decline. In the three schools that experienced falling enrolments, academic performance rates fall through the nineties to a point where they are below twenty percent as a proportion of the school roll. Entry rates similarly decline so that by 2001 entries within Burton, Ropata, and Rossi Colleges are nearly half their 1992 level. While this evidence of change in enrolment, ethnicity and academic performance echoes the findings of Lauder et al (1999), Wylie (1997, 1999, 2006) and Fiske and Ladd (2000), data from the period following the re-introduction of geographic home zones that shows a reversal of these trends would strengthen support for the case they each make.

"I think the re-introduction of home zones has helped to stabilise things a lot."

Principal G

While there is some small recovery in enrolment numbers for Ropata and Rossi Colleges in the late nineties, following the change in enrolment regulations in 2000 there is an acceleration that impacts on three of the four schools in Denton. The enrolment trends set in the previous decade begin to change markedly after Burton College introduces an enrolment scheme in 2002 to address instability in its annual Year Nine intake. The most easily identifiable impact is on Rossi College and is such that by 2009 it has experienced sufficient growth to require its own enrolment scheme. In addition, the roll instability suffered by Ropata College moderates to some extent but does not disappear.

Alongside the lift in enrolment numbers, the gap in academic performance at the first level of assessment between McKenna College and the other three schools closes steadily. Improvements in student attainment at Burton, Ropata, and Rossi Colleges coincide with the reinstatement of restrictions on the degree to which parents can choose a state school. Within two years of Burton College establishing an enrolment zone, the results for Level One of the NCEA for all three colleges rises to levels comparable with those of McKenna College.

In contrast to enrolments and academic performance, however, the process of ethnic polarisation that begins in the nineties appears to become an embedded feature of the educational landscape in Denton. At Ropata and Rossi Colleges the momentum of change from the previous decade has continued with a further, albeit small, polarisation of their student population. At Burton, the Year Nine intake shows an increase in the proportion of European/Pakeha students since the enrolment scheme was put in place, at

least partially countering the earlier decline. In point of fact McKenna College, the school whose roll at least superficially appears relatively untouched by the reforms during the nineties, experiences the greatest change as proportionately greater numbers of Maori and Pacific Island students attend the school.

> "*We, in Denton, bandy about the figure of 40 to 45% of secondary age kids going out of Denton for their college education. Some of that is for single sex education, some of it's for private education, but quite a lot of it is attributable to the 'grass is greener', or perceive better schools. So, we in Denton as a whole suffer that and we have worked really hard to try and change that.*" Principal B

An examination of the data on the previous school of enrolling Year Nine students shows that Ropata and Rossi Colleges are unable to retain significant numbers from within their own catchments until well after the reintroduction of geographic home zones. This is not unexpected. First, for those seeking education beyond their local school there is still an element of 'structural freedom' in that current regulations make allowances for out-of-zone enrolments of students enrolled in a special programme, or with siblings who are or have attended the school, or with parents who are employees of the school, or are otherwise balloted should there still be places available. Second, public perceptions can be slow to change, particularly following an extended period in which the public discourse advocated that parents question the quality of the education available at the local school, with the subtext that it was inferior to that being offered further afield. Third, the pace of negative or destructive change is often significantly quicker than positive or constructive change. Countering the momentum of a prevailing

enrolment pattern in which decision-making is based on families' fear of educational disadvantage could fairly be expected to take some years.

If trends follow the pattern to date, it seems likely that a downstream impact of the Rossi College enrolment zone will be a greater degree of roll stability for Ropata College. Although the picture is complicated by other determining factors such the pulling power of private and single-sex schools, it appears unlikely that they will have any more impact than they currently have on Ropata College enrolments given that the overall rate of local enrolments in relation to population has remained relatively static throughout the period under review.

All of the principals that were interviewed for this study were unequivocal in their views that, given the rising volume of public discourse during the latter part of the eighties that greener (educational) pastures lay elsewhere, the removal of geographic home zones effectively opened the gates.

As noted earlier, an environment existed during the eighties and nineties (and continues to some extent today) that actively encouraged doubt in the quality and uniformity of local state education. While these views had been in the public domain for some time beforehand, the educational reforms of the late eighties, and in particular the deregulation of enrolment, empowered parents to act upon their fears. Entry to particular schools, especially to those that had put in place one of the new self-defined enrolment schemes that came into effect under the 1991 legislation, "became an additional signal of high status" (Wylie, 2006, p. 10) to those who felt the need of such. For those that choose, is the choice positive (seeking perceived educational advantage) or negative (fleeing perceived educational disadvantage)?

"*I think zoning is essential if you're going to get that sort of egalitarianism, which I think is pretty important to have in NZ education.*" Principal F

Paradoxically, the existence of enrolment zones both encourages the perception of a hierarchy amongst schools and restricts the extent to which those perceptions can become a reality. As Principal D noted, exclusion itself raises a school's desirability[26]. It probably makes little difference whether it is private school's fees, a rule based on place of residency or some other determinant, exclusion is the source of exclusivity. On the other hand, the basis upon which decisions about exclusion are made are more directly linked to the type of society we are and/or would like to be. While NZ has not been able to successfully counter "housing-based social segregation" (Wylie, 2006, p. 6), this is seen by many commentators to be preferable to the instability of the alternative tried in the nineties. While in-zone enrolments may reflect social segregation based on house prices, the current set of criteria for prioritising out-of-zone enrolments (as noted above) sets up an additional dynamic of privilege, albeit limited.

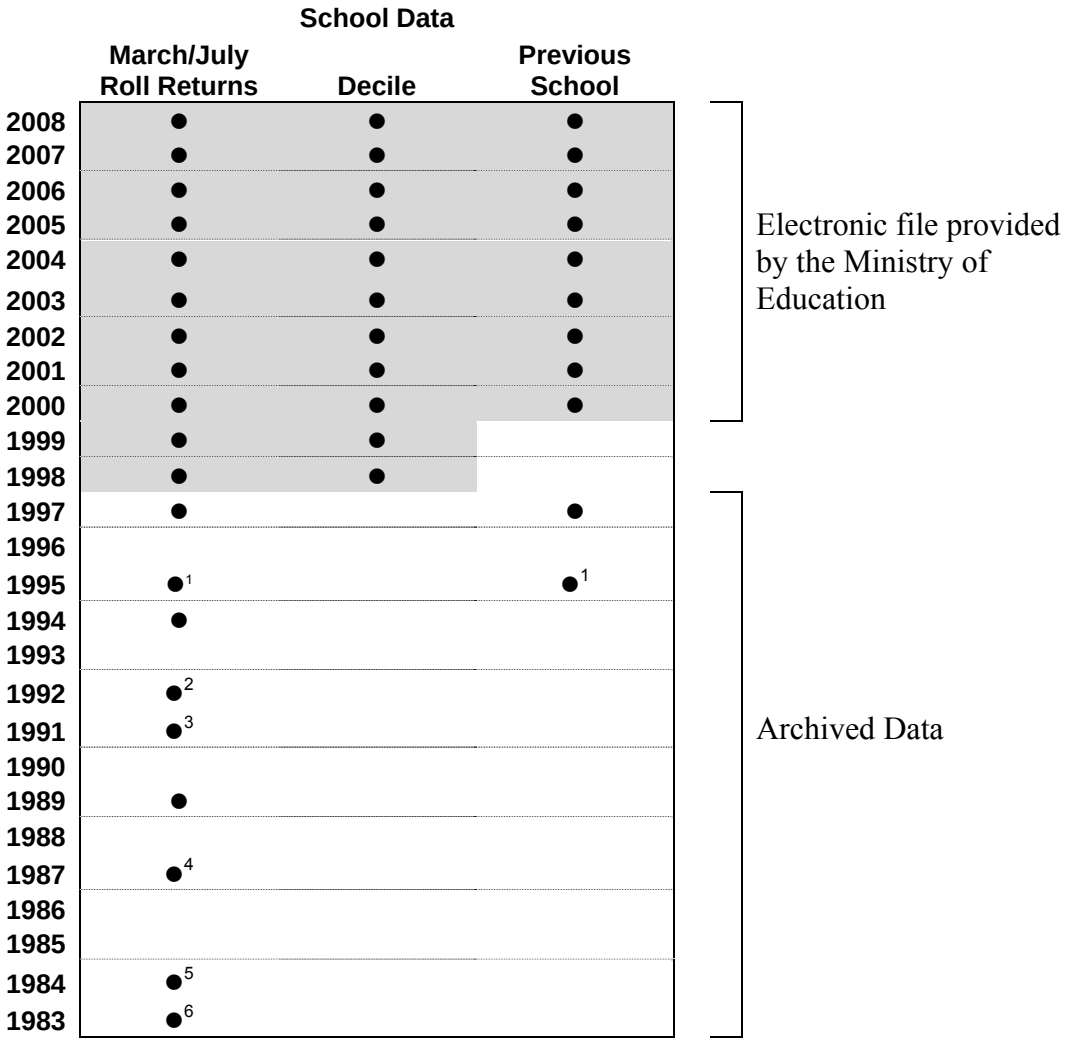
Observational research (like astronomy) can produce powerful results (Wilkinson & Pickett, 2009) – causality does not need to be established solely through manipulation of a variable. While findings on the impacts of school choice are frequently contradictory and therefore inconclusive, this study provides a combination of quantitative and qualitative data to build a body of evidence that firmly establishes the pivotal role that geographic home zones and the right to attend one's local school have in establishing the stability of local schools within a (potential) competition space.

[26] Chapter 6, pXXX

Perhaps the question that remains unanswered is this. Do those who have the cultural and political capital to shape education in New Zealand have any interest in changing the current system of (limited) privilege? If the concept of the quasi-market in schools has become hegemonic, and if parents are largely of the belief that school decile determines results, then perhaps the New Zealand ethos of an egalitarian society can be firmly put in its place as a relic of past idealism.

Appendices

Appendix One – Chapter Three



[1] Missing files for McKenna and Braithwaite Intermediates
[2] Missing files for Jeffries, Knight, Kumari, Manu, Ropata, Te Wake, Fleming, Neilson South Schools
[3] Missing files for Freeman School
[4] Missing files for Freeman and Morrison Schools
[5] Total roll numbers only
[6] Primary School data only

Appendix Two – Chapter Four

A. Total Enrolments by Ethnicity, uncombined, 1987-2009

	European \Pakeha	Maori	Pacific Islands	Asian	Other	NZAID and FFP
1987*	3636	789				
1989*	3667	755				
1991	1978	637	954			
1993						
1995	1487	683	790	134	40	11
1997	1494	705	826	146	18	6
1999	1448	726	856	141	62	19
2001	1412	758	896	199	31	23
2003	1441	861	879	221	30	61
2005	1565	955	928	212	41	32
2007	1594	959	1008	273	49	18
2009	1562	950	1099	322	45	23

B. Enrolments at Burton College by Ethnicity, uncombined, 1987-2009

	European \Pakeha	Maori	Pacific Islands	Asian	Other	NZAID and FFP
1987*	1076	142				
1989*	1153	150				
1991	643	193	195			
1993						
1995	381	246	282	73	7	3
1997	315	222	279	63	13	2
1999	275	221	295	33	55	19
2001	260	276	339	57	25	18
2003	293	266	309	54	18	36
2005	351	264	321	50	13	8
2007	448	280	297	57	8	5
2009	455	282	279	63	16	2

C. Enrolments at Ropata College by Ethnicity, uncombined, 1987-2009

	European \Pakeha	Maori	Pacific Islands	Asian	Other	NZAID and FFP
1987*	598	279				
1989*	649	218				
1991	284	203	170			
1993						
1995	135	256	144	0	0	6
1997	155	305	138	3	0	1
1999	148	297	125	11	0	0
2001	103	280	126	13	3	2
2003	88	352	128	8	3	7
2005	117	392	130	10	1	0
2007	66	379	126	8	6	1
2009	44	337	154	15	1	0

D. Enrolments at Rossi College by Ethnicity, uncombined, 1987-2009

	European \Pakeha	Maori	Pacific Islands	Asian	Other	NZAID and FFP
1987*	768	287				
1989*	722	318				
1991	50	177	520			
1993						
1995	16	93	292	3	0	0
1997	36	73	320	2	5	0
1999	24	93	348	5	6	0
2001	24	95	355	29	1	0
2003	17	109	345	39	0	0
2005	14	147	383	32	6	0
2007	13	141	468	52	5	0
2009	16	140	500	57	1	0

E. Enrolments at McKenna College by Ethnicity, uncombined, 1987-2009

	European \Pakeha	Maori	Pacific Islands	Asian	Other	NZAID and FFP
1987*	1193	81				
1989*	1143	70				
1991	1001	65	69			
1993						
1995	955	88	71	57	33	2
1997	988	104	91	77	1	2
1999	1001	115	88	92	1	0
2001	1025	107	76	101	1	2
2003	1042	134	96	120	8	18
2005	1083	152	95	119	22	24
2007	1067	159	117	156	31	13
2009	1048	191	167	187	26	21

F. Previous School of Enrolment, 1995-2009

from 1st March Returns	Freeman School	Goodall School	Grainger School	Harrison School	Hudson School	Jeffries School	Knight School	Kumari School	Manu School	Fleming Intermediate	Braithwaite Intermediate	Mills School	Avia Intermediate	Greenlaw School	McKay School	Morrison School	Aleni Intermediate	Neilson School	Mitchell School	Te Kura Maori o Denton
										closed 1999										started 2001
1995	INCOMPLETE: only schools contributing 10% or more of their roll were listed																			
High Schools																				
Burton										76			55							
Ropata										7	79		23				1			
Rossi										9			72							
McKenna	6	6	2	9	2	6		2		1	12		1				217	2		
Other																				
Intermediates:																				
Avia																				
McKenna																				
Braithwaite																				
1997																				
High Schools																				
Burton		9	5	9	2	14	5	1	18	57	1		35				12	3	2	
Ropata			1	1		1			0	14	110		18				10		1	
Rossi									1	14			72				2			
McKenna	9	10	2	12	1	8		1	0	1	3						223	10	1	
Other	9	31	10	10	6	27	8	20	5	7	8						23	2	1	
Intermediates:																				
Avia																				
McKenna																				
Braithwaite																				
	16	44	16	28	8	43	11	19	21	80	106		108				234	14	5	

F. Previous School of Enrolment, 1995-2009 (continued)

2001

High Schools																			
Burton	1	9	8	10	5	17	21		31		27		55	20	39	15	21	3	
Ropata						1					54		6			8	6	2	
Rossi													76	6	2	7			
McKenna	8	3	6	3		12	3		1		2		2				222	31	2
Other	20	8	13	21	1	17	7	14	2		8			1	1	2	16	1	
Intermediates:																			
Avia														3	3	5			
McKenna		3	3	1	2							2						32	
Braithwaite									1			5						0	
	25	21	26	31	7	41	27	12	31		79	6	121	26	40	32	229	61	2

2003

High Schools																				
Burton	3	20	22	24	9	12	20	3	30		13	1	47	16	28	10	10	2		
Ropata									2		83	12	20	5	1	18	6			3
Rossi									2		1		91	10	5	10	2		1	
McKenna	5	7		3	1	12	1	2			2						235	24	6	
Other	9	15	9	9	5	15	7	12	4		5		6		2	10	12	5	2	
Intermediates:																				
Avia									1					2		5				
McKenna		2		2								1				2		42		
Braithwaite		1	1	1			1					6								
	15	39	28	35	13	33	25	15	35		90	17	142	29	31	48	229	63	8	3

F. Previous School of Enrolment, 1995-2009 (continued)

2005

High Schools																				
Burton	7	18	10	25	3		20	2	40		13	3	25	24	24	10	1	1		
Ropata			1						3		79	13	9	5	5	28	2	1		1
Rossi									1				102	12	7	7				
McKenna	6	8		2	2	10	2				5						261	18	1	
Other	12	21	7	10	5	25	2	12	2		5		3	2		5	8	1		1
Intermediates:																				
Avia									2					6	2			1		
McKenna	1	1					1					1						24	1	
Braithwaite												5				2				
	22	42	16	33	9	31	22	12	43		87	19	121	42	33	46	236	41	2	2

2007

High Schools																				
Burton	18	29	23	23	12	31	21	3	40		6	5	18	14	24	8	3	2		
Ropata						1			1		62	18	18	5	2	14	3	1		
Rossi			1						5		3		89	31	1	18	2			
McKenna	6	7	2	2	5	1	3				6	1	2		3	2	250	25	2	
Other	5	15	4	5	1	13	5	13				2	1			2	5	2	1	
Intermediates:																				
Avia							2							3	3	3				
McKenna	2	6	1		1											2		39	1	
Braithwaite							2					2								
	27	49	28	26	16	40	29	14	40		67	25	112	46	30	44	228	61	4	

F. Previous School of Enrolment, 1995-2009 (continued)

2009

High Schools																				
Burton	13	12	28	20	10	30	28	1	38		9	2	14	7	22	6	2		1	2
Ropata			1	1							49	7	14	6	2	14	3			
Rossi							1		6		0	1	73	21	1	12	6		1	
McKenna	6	9	5	7		3	2				6	1	1			2	238	24	3	1
Other	22	15	5	12	5	10	1	9	4		1	2	1		1		8	2		1
Intermediates:																				
Avia						1										1				
McKenna	2							1				1	1	1			2	34		
Braithwaite												3					1	1		1
	35	31	33	34	13	38	28	9	42		56	12	89	29	23	29	223	23	5	4

G. Previous School of Enrolment by Contributing Primary Schools, 1995-2009

	West Braithwaite School	East Braithwaite School	Ropata School	Te Wake School	North Warner School	East Warner School	May St School	Denton School	Fleming School	Lawton Park School	Neilson Central School	Burton School	Neilson South School	St Bartoli School	St Julius School	St Bernadette's School	St Jacob's School	Non Denton Schools
2001																		
Intermediates:																		
Avia				2	38	16	45	16	48									
McKenna	8	9	5	2	2	2		1	1	34	32	32	66	1			26	7
Braithwaite	31	18	38	17					3									2
Other	5		5	3	1		3	1	2		1			47	9	7	3	1
2003																		
Intermediates:																		
Avia				11	40		29	16	34					2				18
McKenna	6	2	1	1			1	1	1	46	26	28	78				2	14
Braithwaite	33	18	40	11	1				5	1								2
Other	6	1	3	2	1	1	1		1	2		1		30	13	2	6	1
2005																		
Intermediates:																		
Avia			1	7	26	17	30	21	21					2				3
McKenna	7	1	3	6		1			1	49	28	32	87	2	1		17	11
Braithwaite	26	25	32	5				1	2									6
Other	3	1	1	6	2	1		1	1	1				36	16	5	5	3
2007																		
Intermediates:																		
Avia			1	10	31	14	29	9	19					5				2
McKenna	19	2	13	5		1				37	30	14	69	2	1		16	5
Braithwaite	26	14	18	3		1									1			3
Other	1			6	1				3					32	14		1	1

G. Previous School of Enrolment by Contributing Primary Schools, 1995-2009 (continued)

2009

Intermediates:

Avia				2	28	6	22	3	18									5
McKenna	14	1	8	5	1			1	1	32	39	16	80	1	3	1	15	7
Braithwaite	19	13	18	2		2												2
Other	2		7	10		7	2	1	2					36	16		6	1

H. Previous School of Enrolment for Rossi Year Nine Students

	Rossi College	Avia Intermediate	Greenlaw School	McKay School	Morrison School
2001	**504**	340	343	314	425
2003	**510**	339	340	289	433
2005	**581**	282	318	291	423
2007	**677**	250	342	258	418
2009	**714**	222	348	237	430

Appendix Three – Chapter Five

A. Total Population by School Catchments

	Burton Catchment		Ropata Catchment		Rossi Catchment		McKenna Catchment	
	Total Pop	School Age	Total Pop	School Age	Total Pop	School Age	Total Pop	School Age
1986	19697	5801	12579	3394	20330	7256	14587	4037
1991	21441	5530	12314	3026	19532	6159	14735	3735
1996	23157	5433	11750	2902	18473	5416	14532	3518
2001	24436	5908	11286	2803	18504	5471	14869	3721
2006	25533	6028	11565	2748	18480	5536	15454	3910

B. Index of Deprivation Variables

NZDep2006 combines the following census data (calculated as proportions for each small area):

Dimension of deprivation	*Variable description (in order of decreasing weight)*
Income	People aged 18-64 receiving a means tested benefit
Income	People living in equivalised* households with income below an income threshold
Owned home	People not living in own home
Support	People aged <65 living in a single parent family
Employment	People aged 18-64 unemployed
Qualifications	People aged 18-64 without any qualifications
Living space	People living in equivalised* households below a bedroom occupancy threshold
Communication	People with no access to a telephone
Transport	People with no access to a car

Note: NZDep96, NZDep2001 and NZDep2006 all make use of the same nine variables. NZDep91 uses ten variables of which eight are common to the later indexes. For further discussion of the differences between NZDep96 and NZDep2001 or between NZDep2001 and NZDep2006, see White, P., Gunston, J., Salmond, C., Atkinson, J., & Crampton, P (2008).

C. Comparison of NZDep96, NZDep2001 and NZDep2006 distributions

Table 2: Comparison of NZDep96, NZDep2001 and NZDep2006 distributions

Quantile	NZDep96 score	NZDep2001 score	NZDep2006 score
100 % (most deprived)	1528	1521	1619
99%	1315	1307	1320
95%	1202	1199	1203
90%	1140	1141	1138
80%	1073	1075	1072
70%	1032	1034	1030
60%	1000	1002	999
50 % (median)	975	976	974
40%	954	953	953
30%	936	934	935
20%	917	916	918
10%	897	895	899
0 % (least deprived)	830	834	838

source: Atlas of Socioeconomic Deprivation
in New Zealand NZDep2006.
(White, et al., 2008, p. 25)

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