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THE DEVELOPMENT AND EFFICIENCY  
OF NEW ZEALAND'S EDUCATION

BOARDS:

A STUDY IN THE CHANGING NATURE OF  
CONTROL

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the requirements for the degree of Master of  
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## ABSTRACT

The form of the administration of New Zealand's education system, has in part, been the outcome of a constant struggle between local and central authorities for the right of ultimate control of the school system. The movement of the key responsibilities in the development of education administration is reviewed and reasons are suggested for these changes. The shifts in responsibility are also viewed in conjunction with the various structural changes to the size and number of education districts since the formation of the Provincial Governments in the 1850's.

The research draws extensively from the geographical techniques that assess the spatial effectiveness of administrative systems. These are adapted to measure the varying spatial effectiveness of systems belonging to four time-periods; so that the complete development of education administration can be monitored. The varying spatial arrangements of schools, education districts and administrative centres shows increasing spatial effectiveness up until the present system.

Structural changes in the number and size of education districts can only partly explain the process of decentralisation or centralisation of authority. While sub-division of administrative units means some access for schools and parents to the processes of administration it does not necessarily mean that the new administration will have more authority. Together with the

structural changes in administration, a study of the movement in the "loci of decision-making" must be undertaken. A 'Centrality Index' technique is employed to assess the changing location for the responsibility of 6 key decisions that affect education administration. Using this technique, conclusions are made, wherein the system of education administration is seen as centralising up until 1947, after which a process of decentralisation evolves.

Spatially, it seems that the smaller education districts would ensure more contact for schools with their administrative centre, therefore the present policy of structural decentralisation and the sub-division of existing education districts might allow more effective administration. Decentralisation of decision-making also guaranteed that more decisions were being made at the local level.

Finally, these assessments are matched against the economics of operating administrative districts. The principal conclusion in this section of the study is that the larger districts are relatively less expensive to operate and that the optimum size for an education district is approximately 130,000 pupils. The conflicting conclusions concerning the economic and spatial efficiency of education boards highlights the complexity in assessing total administrative efficiency or trying to gauge an effective optimum size for an administrative unit.

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There recently appeared a series of comments regarding the usefulness of the social scientist in addressing problems concerned with the effectiveness of New Zealand's State Service. With respect to education for example it has been said that

traditionally the decision maker in educational policy has relied heavily upon trial and error in defining administrative areas (Holmes 1976 , 176).

This assumes that the issues of cost-benefit, and spatial and economic effectiveness were often overlooked or not raised in some areas of decision making. The Holmes Report (1976) stressed this point and asked for more research into assessing the impact of all social service expenditure, including the finance authorised for education which is spent by an administrative system that controls the mechanisms of a nation-wide enterprise exceeding 929.3 million in its annual net costs (AJHR E1 1979).

In education administration today, under the spur of rapid change in society, new kinds of administrative methods are being adopted: firstly, the smaller education boards are prepared to assume some responsibilities and combine with the Secondary School councils within the area to provide a more unified approach to education administration: secondly, where appropriate the larger boards are decentralising their authority to smaller, more local education boards which in turn will adopt a more unified approach.

This policy arrives today through the effort of the education boards and the department to search for a balance of local interest with national responsibilities. The ideal situation is for the advantages of local control i.e. education structured for the needs of the locality which promotes flexibility diversity and sensitiveness to the local life, to balance with the advantages of centralised administration. Strong centralised controls have long been accepted as a necessary condition of the funding of education through national taxation and is an expression of the deep commitment New Zealanders feel to the principle of equality of educational opportunity. The main benefits of centralised control are the establishment of national standards in staffing structures, salary scales and grants of all kinds and the even level of provision throughout the country.

Clearly the relationship between local and central control is important to the development of education in general and it is a fundamental aim of the study to record the changing patterns of education administrative units, the reasons for change and the efficiency of the administrative system at various times. The study seeks to achieve this through understanding, and analysis of, the balance between local and central authorities and its effect upon administrative units. The centralisation - decentralisation continuum (Fesler, 1968) is selected as being a process that is fundamental to the development of education administration. Its ramifications today must lead on to enquiring about the optimum

size of administrative units with regard to imminent changes in the structure of education administration.

The effects upon the system today can be monitored in the light of change in the intervening years. There have been considerable adjustments in the relative function of local and central authorities and their movements towards either a centralised or de-centralised system. These movements have structured effects upon the size, shape and number of administrative areas as well as effects upon the relative distribution of powers between local and central authorities.

By analysing the spatial efficiency of four patterns of education board districts since the formation of the Provincial Councils in the 1870s a historical perspective is drawn. The system today is therefore seen with regard to its development. Economies of scale and organisational efficiency measures are used to compare with spatial efficiency measures. Efficiency is analysed from two standpoints therefore tentative conclusions can be made about a proposed reorganisation of education district boundaries.

It is realised that the study therefore tries to fit analyses of efficiency into complex social, economic and political structures that underlie the provision and operation of a public service. However Massam (1975, 122-123) states that

attempts to explain world patterns should thus take note of the milieu in which the service is provided. Also prescriptive statements and suggestions for modifying the arrangement of public facilities are not likely to be readily adopted unless the planner is cognizant of the political scene.

The political scene may eventuate to be a set of variables which defy definition, but it may be possible to concentrate on one aspect of the political scene, such as the identification and measurement of the "centralisation-decentralisation" continuum and provide a basis with which to comprehend the political and administrative scene. Intuitively, it seems we recognise the systematic nature of human organisation but fail to move towards a more precise model which will link together all components in such a way that we can evaluate the utility of alternative policies for providing public service.

Education Administration is a public service with varied and fluctuating development; the changes in its administration provide a suitable backdrop with which to view the characters, and social and economic circumstances that initiate change and re-organisation. Chapter 1 reviews the historical background and points out the reasons for centralisation or decentralisation, reasons which would possibly apply to other circumstances and systems.

The evolution of administrative systems has provided several models, (Ellis, 1972. Massam, 1972. Whebell, 1961). Massam's outline provides a series of stages of administrative evaluation that links with the development of New Zealand's

education Administrative system. From the model four stages are selected that provide significant changes in the evolution of administrative systems. Here the varying numbers and the structures of the education districts are taken into account and conclusions drawn about the spatial efficiency of the differing structures through time. However the stages only partly respond to any form of decentralisation or centralisation that may occur through the process of administrative evolution. For example, increasing numbers of districts and the development of additional agencies can reflect structural decentralisation, but the adjustments in structure within educational administration are limited. These adjustments nevertheless are significant and provide evidence to help show the changing nature of education administration. The evolution of the system reviews the spatial characteristics of the relationship between the school and its administrative centre, the cumulative distances for each district changing as the school system grows and the education district structure changes.

Miklos (1973) distinguished between the changing structure of the educational system and the changes in the locus of responsibility for decision making. The locus of decision-making indicates the position at which the responsibility for the decision is held. Chapter 3 formulates a model that assesses decentralisation through the changing locus of responsibility. The model employs a centrality index to measure the cumulative distance from the school to the administrative centre that has the responsibility for six key decisions. The nearer the

decisions are made to the school the more decentralised the system. Five time-periods were considered (1870, 1890, 1914, 1947, 1978) and the locus of decision making varied enough to signify the administrative changes that took place in the development of education administration. Varying mean indices represented movement along the decentralisation-centralisation continuum. However adjustments were made in the light of developments in transport technology. The six decisions basically involved an administrative process that normally incorporated a personal visit by an administrator to the individual school. Therefore as transport became more efficient the effect was to bring administrative centres closer time-wise and induce decentralisation.

The policy making team that decides to decentralise must also be aware of the increasing costs of administration and how structural decentralisation and the setting up of new offices will incur considerable expense. An assessment of the optimum size for education administrative units should help the policy maker to decide whether it is financially worthwhile to split up an existing unit that perhaps is operating efficiently, or whether with the smaller boards and amalgamation or an increase of work load or responsibility within the board would be economical. Economies of scale do exist within the board of education therefore a fundamental decision has to be made between the advantage of increasing size and the disadvantage of a large unit that must administrate education at a considerable distance or without due regard to local conditions.

The geographical problem that this study addresses is to design a form of spatial organisation which maximises the prospects of the less fortunate regions (Harvey, 1972, 51-53). It is debatable for example, whether a greater centralisation of decision making (which has the advantage for ironing out differences between territories) should prevail over greater de-centralisation (which has the merit of being able to prevent dull uniformity). The safer conclusion would seem to be that there is no absolute choice between the two systems, however it is readily obvious that there is movement between the two extremes, movement that has developed from the initial characteristics of the system which have had such a strong influence on the attitudes and the structure of education administration today.



## THE CHANGING NATURE OF CONTROL

A review of the historical development of New Zealand's Education Administration suggests that six periods can be distinguished in which the administrative structure is different from either the preceding or succeeding period. Each period commences with a major change in the administrative structure.

1. 1847-1851 - following 'An Ordinance for Promoting the Education of Youth in the Colony of New Zealand' (1847)
2. 1852-1876 - following 'An Act to grant a Representative Constitution to the Colony of New Zealand' (1852)
3. 1877-1913 - following the 1877 Education Act.
4. 1914-1947 - following the 1914 Education Act.
5. 1948-1963 - following the setting up of the Auckland office of the Department of Education in 1948.
6. 1964-1979 - following the 1964 Education Act.

1847-1851

From 1840 onwards, large numbers of English, Scottish and Irish immigrants moved into the principal centres of New Zealand's early development; with them came their children whose education rapidly became a matter of concern. In response to this problem the original educational system was organised by Sir George Grey in New Ulster in 1847 (Northern New Zealand). He commissioned

financial support for missionary work among the Maoris as well as for European children.

Curriculum, inspection and appointment of teachers was the responsibility of the Governor who was advised by an executive council. Thus the state first recognised its responsibility for the appropriation of public funds for national education. The Executive Council, in practice, consisted of religious leaders and missionaries who received a proportion of the total revenue of the colony (an amount not exceeding one twentieth of the total revenue of the colony for any one year). The system was denominational, the actual administration of the schools being run by the heads of the churches. This the New Munster (southern New Zealand) settlers refused to accept.

The non-conformist Nelson settlers had already organised an efficient system of non-sectarian public schools, the success of which encouraged Alfred Domett, a prominent Nelson settler, and the provincial secretary, to recommend to the New Munster Council, the establishment of a system of national, free and compulsory education for the Colony. Owing to the establishment of provincial Governments by Sir George Grey in 1853, the field of education was then organised by local authorities and Domett's plans were dropped. However the basis of his ideals re-emerged in 1877 with the adoption of the Education Act that founded a national system of education.

Therefore early educational administration was mainly the

concern of the churches and some private secular organisations which came to be assisted by limited grants from state funds. However some elements of central control existed, despite the growing difference between the regions, that led to the formation of provincial council in 1852.

#### 1852-1876

The Act to grant a 'Representative Constitution to the colony of New Zealand' (1852) abolished the provinces of New Ulster and New Munster and provided for six new provinces: Auckland, New Plymouth, Wellington, Nelson, Canterbury and Otago (Cummings and Cummings, 1978). Basic administration of the provinces included an elected Superintendent and a Provincial Council of not less than nine members. The General Assembly in Wellington consisted of a Legislative Council and a lower 'House of Representatives'. The General Assembly excluded matters such as custom duties, coinage and currency from the jurisdiction of the provincial councils, but education became the responsibility of the provincial councils.

All the provinces passed legislation on education and in their early phases of development showed a remarkable diversity not only in their effectiveness as administrators of education but also in the assumption and ideals upon which each was based. Despite marked differences in the size of population, social structure and financial status, the various systems were seen to develop generally towards a norm in design and philosophy.

Administrative style within the provinces originally varied. Basically the superintendents were generally faced with two problems which provoked differing administrative responses. Firstly, in what way and to what extent, ought the state to intervene in the education of New Zealand's young? Secondly, how was the state to react to its corporate capacity towards the various religious denominations existing within it? Auckland and Canterbury for instance adhered to Governor Grey's ordinance of 1847 which recognised the churches as the executive body to undertake the organisation of state grants. In Wellington, Nelson and Otago the administration was more secular, allowing more influence from public bodies and the state to take effect on the running of the provincial education system. After considerable discord and political conflict, this principle was also adopted by Auckland and Canterbury.

The administration of the provincial councils also had to contend with differences in economic status and potential. For example in Canterbury and Otago, where the provincial governments had ample sources of revenue and the churches were well endowed, education made good progress, but in the North Island where settlement and economic development had been impeded by the Maori Wars (1860-1865), and provincial governments had limited resources, education provision developed slowly. An illustration of this fact was that in 1870 the total expenditure for education in the colony was £32,000 of which £2,000 was spent in the North Island (Webb, 1937).

The obvious inequality of this decentralised system of control began to promote concern for North Island politicians. In 1871 Sir William Fox, then Prime Minister, introduced a Bill to establish a central ministry of education, his intention being, not to supercede the provincial control but to establish certain minimum standards. The development of the administration of the Nelson Province deserves special mention and allows a more detached discussion of the functioning of a provincial education system. A central board of education within the province disbursed a grant from the General Assembly as well as finance gathered from levies of five shillings on parents who lived within a three mile radius of a school, whether their children actually attended school or not, with a limit of £1 per household. Therefore indirect compulsion was intentionally administered for the attendance of children of school age (5-14 years). (Butchers, 1932.)

The religious factions of the society were kept content by the fact that Catholics and Protestants sat as colleagues on the education board. The Roman Catholic schools received 'Headmoney' periodically from the board for each child educated at the separated schools, based on the ascertained cost of educating children at public schools. The Catholic schools were relatively few in number and adhered to the requirements of secular teaching.

This system proved to be <sup>the</sup> most effective of the provincial systems as it allowed the highest percentage of children of school age to attend school than in any other province. However to secure this situation, Nelson spent the highest percentage

of its total revenue on education, and this, notwithstanding the fact that its total revenue per head of population was the smallest of all.

During the latter half of the provincial period, more separatist thinking occurred, resulting in Hawkes Bay creating its own education board from Wellington (1859) and Marlborough separating from Nelson (1859). Two years later the Province of Southland came into existence, but Southland found financial autonomy difficult and reunited with Otago in 1870. By the mid seventies, a sense of national unity quickly developed as transport improved and the differences between the provinces in educational provision became apparent. In 1871 for example, the provinces of Nelson, Otago and Canterbury were spending an average £2.10.0 for every child of school age as against an average of only 5s in the rest of the colony (UNESCO, 1952, 14-18). After the attempts of Fox (1871) and Vogel (1873) to establish a national education system the issue was forced by the abolition of the provincial governments in 1876. A new system of control for schools was needed and there appeared a real opportunity for the development of a national system of education.

The religious problem proved to be a stumbling block as Otago members of the General Assembly were in opposition to the notion that the bill would create state grants for Roman Catholic schools which would prove unacceptable to Protestant Otago members. Fox, however, soon realised that the respective claims of the central government, the provincial government and

the churches<sup>h</sup> to share in the control of education would be neither recognised nor equitably adjusted.

Sir Julius Vogel in 1873 re-introduced a milder version of Fox's Bill, in which the growing conflict between provincialists and centralists overshadowed its basically effectual proposals. The religious administrations of provincial education systems were overturned and led to a feeling that a national system would iron out the inconsistencies of the denominational control. Canterbury for instance, originally was supplied by public money split three ways, a third to each religious denomination. The practical result of this arrangement was firstly to create three authorities capable by their very structures of being able to act harmoniously within <sup>themselves</sup>, i.e. each denomination put forward its own views and beliefs that did not coincide with general plans which was the objective of the provincial legislation. Organisational change caught up with public opinion and a new education board set up denominational schools and the problems of religious instruction was left to the discretion of the local committees who generally allowed unbiased religious instruction.

Despite adjustments within each of the provincial systems that developed, each administration evolved towards a relatively effective norm and great improvements were made to educational conditions but the overall system for the education of New Zealand's young still contained too many inequalities. The provision for education varied dramatically throughout the country, and the

attainment of certain minimum standards of literacy was a matter of national anxiety at the time and politicians began to realise the provincial system of education administration must change.

From the administrative point of view the period reveals three relevant organisational features:

1) The growth of secular control over religious administration. The influence of churches originally gave the beginnings of the New Zealand education system a centralist aspect, wherein education like the aspiration of the church, would be nationwide and equally dispersed. However, from the beginning, an active minority fought for an education system which would be free, secular and compulsory (Whitehead, 1972). The prominent disadvantage of the church system was its division into two or three units and the organisational problems that involved from this division. However, a different issue soon arose:

amongst the provincialists still quarrelling over the apple of denominationalism, came to be thrown a second apple of discord - that of centralisation. (Butchers, 1932, 76).

2) The tendency of the provincial governments to conform to one pattern. When the control of education ended up in the hands of the provisional councils, each devised a system of its own liking. Therefore in their initial phase of development, these provincial systems displayed a remarkable diversity, not only in their effectiveness, but also in the assumptions and philosophies upon which each was based. Equally remarkable was



the way in which the various systems converged towards a national norm from extremely divergent beginnings. (Harker, 1978, 3-6).

3) The disadvantages of a purely decentralised approach to education administration. The inequality produced by the provincial system has been noted; however, the success of those education boards given sufficient funds, is seen as a remarkable achievement considering the numerous difficulties of the colonial environment of the time. However, once communications and conditions for education improved, the inequalities across the country demanded a centralised authority with the control to organise resources and distribute fairly to all parts of the country. Therefore although advantages existed for the decentralised education system in some provinces and substantial progress was made, the country's resources could not support the development of education at equal rates throughout the colony.

#### 1877-1913

The education bill that Sir Charles Bowen introduced before the House of Representatives in 1877 was, he proudly proclaimed

the most decentralising bill that has been passed  
in any English country. (AJHR, 1878, 372)

The bill advocated a three-tiered system of administration, a central education department under the authority of the Minister of Education, twelve education boards, and school committees elected by a ballot system by local householders.

The central department was allocated the following responsibilities:

- 1) Distribution of the capitation grant to boards.
- 2) To review reports sent from the boards on the use of grants.
- 3) To determine and prescribe the curriculum of the schools (primary only).
- 4) To prescribe the text books that might be used.
- 5) To "make, alter and repeal regulations and orders".
- 6) To generally administer the act.

The Education Boards:

- 1) To allocate the grant for education within their area.
- 2) To establish, build and maintain schools.
- 3) To appoint and dismiss teachers (in association with the school committees).
- 4) To inspect the work of teachers.
- 5) To train teachers.
- 6) To establish District High Schools.

Local school committees for each school or group of schools, forming an Education district, with power:

- 1) To elect the member of the Education Board.
- 2) To recommend to the Board teachers for appointment, from a list presented by the Board.
- 3) To assist the Board in determining sites for new

schools.

4) To provide and maintain the school house, provide firing, clean the school and generally maintain the grounds.

5) To decide whether the compulsory clauses should apply in the district.

6) Generally<sup>to</sup> manage "educational matters" within their districts.

(1877 Education Act).

Even though a considerable number of responsibilities were granted to the central department including basic control over the allocation of grants, the immediate effect of the Education Act of 1877 was to leave the education system of New Zealand under the control of the boards. Firstly, the boards set up by the Act were in most instances the old provincial education authorities in a slightly different guise, with the same basis of personnel and attitudes. Secondly, during the first two years the Act was in operation, the Grey Ministry was in power, Sir George Grey, being an opponent of centralist tendencies, generally forced policies to strengthen the position of the boards. Lastly, the boards generally had representatives who sat in Parliament and boards like Auckland, Canterbury and Otago would have three to four representatives in Parliament (Webb, 1937).

The Atmore Report 'highlighted' the first of the two basic anomalies concerned with the ensuing location of control for education administration.

The Act as passed set up a one sided system under which the whole of the cost was thrown upon the colonial government, while almost the whole of the control, including the control of the inspectorate, was entrusted to the local educational authorities. (Atmore Report 1930, 138).

This situation obviously developed conflict between centralists and provincialists, as it was the direct aim of Bowen to leave intact the structure of the provincial education boards, yet create a situation where the inequalities of the provincial situation were negated.

The centralist/provincialist problem therefore was by no means resolved. However, the general feeling was to erase the inequalities of the education system and to avoid the battle for reform during the seventies and eighties. These events made a very strong impression upon New Zealanders and go a long way towards explaining one of the philosophies that the modern New Zealand educationalist adheres to:

That educational provision should be the same for everyone despite the variety of economic situations that people are born in. (Currie Commission, 1962, 23).

These aspirations to equity within the educational system could only, however, really be satisfied by the creation of a centralised system of education and the 1877 Act at first seemed only to have reinforced the local control of education. However, the second anomaly lies in the fact that the astute politicians of the day realised that the bill would eventually lead to the development of centralised power. For having acquired the ability to "make, alter and repeal regulation and orders", the government

would be forced into a situation of interfering with the local system and the board would gradually fade under the power of the Minister (Webb, 1937).

Bowen originally intended to secure complete decentralisation by allowing the school committees more powers than the bill eventually allowed. However, the curtailment of the local capitation grant which had given the local committee an independent source of revenue meant that local committees lost their potential for ultimate control at the local level. Nevertheless the legacy that the provincial system left has helped the contemporary administrator as there will always be a local concern for educational matters and a local awareness that undoubtedly has helped improve administration today. (Currie Commission, 1962).

The financial provisions of the system were simple. For each child in attendance, £ 3.15 was payable to the Board, plus a series of grants for the building and upkeep of schools and any other usage that the department agreed upon. The Boards were still entitled to profits from endowments, which were however deducted from the block grant paid to the boards (Butcher, 1932). For twenty years after 1877, however, the central department was pre-occupied with exercising real effective control over the expenditure of the boards as the department without adequate staff could not control and locate the financial malpractices adopted by the boards in order to gain more money.

with impunity the boards used money for purposes other than those for which it has been voted, supplied attendance estimates which were not accurate, estimated their building requirements on the most lavish scale, and paid scant attention to the commands, reproofs, exhortations and requests for information which flowed in an unending stream from the central department.  
(Webb, 1937, 38).

Efforts were made in 1888 to strengthen the Department's position, the Hon. George Fisher, the Minister of Education at the time conducted a survey that showed that up to 1888, Government building grants had totalled £852,778, an amount that in the Minister's opinion was £90,000 more that was necessary to erect buildings of a durable character and of adequate size. The influence of the boards' members in Parliament was strong enough to resist any change.  
(AJHR, 1888).

The development of a central department therefore appeared unlikely to force the administration of education to centralise at this stage. The boards enjoyed more and more success until 1879 when economic conditions forced a change. The restriction of the economy allowed the department to exercise its right to force economic retrenchment measures on the boards and it was not until 1891 that the situation improved. However, unsettled economic conditions remained so that the department could force the situation in which the well endowed South Island education boards found that their revenue ended up establishing school buildings in the North Island. Opportunities developed for the centralisation of control as the long retarded development of the North Island progressed as the government made peace with

the Maoris and Population moved northwards from the South Island to take advantage of a more settled colonial environment. (Arnold, 1973).

In 1879 the Department took over the responsibility for native education (Cumming and Cumming, 1978). The department therefore set up a separate education system of Native schools the committees merely being local agents for the department. The school committees had no executive power, the local contribution for school sites were obligatory and free text books were provided for native school pupils.

The department used the success of the establishment and functioning of the Native School system to force political leverage upon the provincialists. The department proclaimed that the cost of administration of the Native schools per pupil is:

much less than that is the case in the public schools where the boards and the committees expenses have to be added to those of the department itself. (Butcher, 1929, 51).

However, it seems that for political purposes the early Native schools were pampered with large amounts of educational materials so that the actual net cost was relatively more than for the standard public school.

Wellington also took control of the Industrial Schools in 1880 from municipal and denominational institutions; the schools were subject to inspection and were required to report to the department every year. Special schools, such as schools for

the deaf and blind, institutions for juvenile probation, together with child welfare centres were also developed under the auspices of the department.

The initial blow to the boards' financial independence was dealt in 1901, when the Public School Teachers Salaries Act made regulations that ensured that the great bulk of the boards' general expenditure was channelled through the department and for the first time the department paid uniform salaries to the teachers throughout the colony. Secondly, the department investigated the allowances paid by the boards to the committees, which appeared to be on different scales. The standardising consequence was that an Education Amendment Act was passed requiring the committees to pay a uniform sum of 5/6 per child out of their own maintenance administrative allowance which itself was reduced to twelve shillings, which left only 6/6 per pupil for themselves to spend. Further developments occurred which entrusted the buildings and development finances to the department.

The Boards fought to reduce the increasing amount of central control, but the centralists had attained too much power over the 1890's and early 1900's. The power and influence of Rt. Hon. R.S. Sneddon and Mr George Hogben in various capacities led to the initial drive into board supremacy. Hogben's initiative and position as Minister of Education gradually forced the centralisation of the inspectorate. The department was empowered to delegate inspectors to visit all schools and basically accomplish



the centralisation of the inspectorate.

Hogben however, realised the importance of local control and often deliberated upon the advantages of decentralisation but his primary aim was to improve the schools themselves, the teachers in them, and the subjects that were being taught. He found that amid the force of centralising opinion was a way in which to realise these goals. Therefore in addressing the problem of quality within the education service, administrative changes occurred which would threaten the power of the boards and committees.

The influence of the New Zealand Education Institute, formed in 1885 has also been heralded as being a major force in the movement towards the centralisation of education administration. As a development of earlier provincial institutes, the New Zealand Education Institute allowed teachers to propound their opinions and criticise or oppose their employers. The Institute developed a national outlook and because of the sincerity of its leaders, enjoyed the respect and confidence of the government of the time. The Institute appealed against arbitrary dismissals, the inequality of wages and conditions between the boards, and helped to force the adoption of a superannuation scheme for teachers, the centralisation of the inspectorate, and the institution of the national grading system and its general usage as the basis for teaching appointments. (Butcher, 1929).

During the last years of the nineteenth century, New Zealand's politics changed dramatically. The ruling sector consisted more and more of men whose ideas were a product of a colonial environment rather than men whose background was English and adopted English ideas of building a colonial aristocracy. The economic depression following the 1877 Act brought their policies and ideas into disrepute and the landowning class lost their prosperity (Webb, 1937). Moves to break down the introverted control of localities was in keeping with these new ideals.

Education was not the only government service that was facing a change in the location of control. ~~But~~ there occurred in general, a rapid increase in state activities during the Seddon Period (1891-1901) <sup>and</sup> the local government system also faced centralisation of control and basic re-organisation.

The findings of the Cohen Commission (1912) saw the organisational weakness that had developed out of a conflict of interest.

the complexity of the departmental administration, the difficulty of securing satisfactory management in small education districts and the lack of uniformity, aim and method amongst inspectors. (Cumming and Cumming, 1978, 128).

The Commission advocated a reduction in the number of education districts, and the control of all elementary, secondary and technical institutions by the boards, and this had the effect of rationalising control and cutting down the complexity of the board/committee situation. If the 1911/12 period of

government had been more stable, the government would have worked out a scheme of educational reform that would have aligned itself with the recommendation of the Cohen Commission with the unification of control for primary and post primary education, rather than secondary education being controlled by autonomous 'boards of managers'. An aim that still eludes the re-organisation of education today.

In many ways the Education Bill of 1914 was the result of these aspirations towards change and reform: yet the bill would also realise the public opinion that had recently been established for public and local control. However, centralisation processes were still operating and the 1914 Education Act still legislated for more centralisation. The growth of public opinion against centralisation indicated that adverse reaction to increasing centralisation would always appear and in some cases decentralisation processes could be occurring at the same time as centralisation.

This period of education administration saw the complex interrelationships of events that led to the decline of local authority and the education boards and the beginning of a movement towards the location of control in central authorities. Personalities, with varying ideologies, reacted to the need for equality of resource allocation within differing economic circumstances. Conflict between provincialists and centralists often led to an increasing inefficiency of education processes and provided an opportunity for change toward centralisation.

The findings of the Cohen Commission realised the need for co-ordination among the various facets of education administration laying the prerequisites for the need of a centralised authority to conduct and administer a more structured and homogenous education system.

#### 1914-1948

The Act ran into over 164 clauses, the majority of which consolidated previous clauses. Despite parts of the bill that allowed for the continuation of the boards, though at a reduced number, the bill was heralded as the end of Hogben's fight against the provincialists and the beginning of a period of more reform and change.

The changes it brought to bear on the administrative system were:

- 1) Control over the inspectorate was moved from the boards to the central department.
- 2) The financial authority of the boards was further curtailed by a more rigid separation between special and general accounts and the direct restriction of free funds at the disposal of the board.
- 3) Requirement was needed to the Minister for the establishment of new schools.
- 4) The adoption of a national grading system for teachers.

5) Provision was made for the reduction in the number of education districts to 'not less than seven or more than nine'. However, owing to the strength of the local interests, the maximum figure was adopted in the Education Amendment Act, 1915. North Canterbury, Marlborough, Westland and Grey lost their status. (All aspects lead to further centralisation).

The first task within the administration of education was to reorganise the department itself, to incorporate the duties of the Director General of Education with an assistant to help him, and the Inspector of secondary schools.

A National Council of Education was a new proposal which originally was designed to act in an advising capacity, but would have little to say about the internal administration of the department. However, the council reported to the Minister on all aspects of what was now a national education system. The council would incorporate representatives from all aspects of the education system. It seemed that the national council provided an outlet for local opinion and minority views, essential to the system when a centralistic approach was increasingly being adopted.

The reorganisation of the education districts also occurred internally, as following the proposals of the Cohen Commission every education district was to be divided into one or more urban areas and a rural area.

the rural area is divided into three wards, each containing, as nearly as may be, the same number of children in average attendance at the schools, and for each ward two members are elected - one every two years. An urban area consists of a borough or group of boroughs having more than 8,000 inhabitants. The number of members for each urban area is two for each sixty thousand or part of sixty thousand inhabitants. (Butcher, 1932, 72).

An attempt was made to adjust to the growing urban population of New Zealand and to rationalise the size of education districts. Originally the Cohen Commission had outlined five large administrative areas yet the district boards had successfully resisted any serious reduction in their number.

Local control was still effective in the shape of the secondary school boards, and just as the primary school authorities had fought for more autonomy over the boards, the secondary boards had to do the same. They resisted at this stage the influence of the central department and the education boards, and maintained a right to control their own intake and financial system.

The 1914 Act however, was considered a series of compromises, not managing to create any clear purpose that the ensuing years could capitalise on. It failed to respect and grant power to the newly formed council of education <sup>and thus</sup> prevented the council from blending into the system the advantages of local and central control. Also it did not clarify or control the secondary school boards so that the system still reflected the difficulties of having different factions at work.

The period following was one of suspended animation and conservatism. Little change occurred through the Great War and the important personnel in the department required little more than the maintenance of peace and the fragile status quo with the boards. The department's conservatism reinforced the centralistic ambition of the department and it became common knowledge that the departmental view of the boards was that they were superfluous and ineffectual.

In 1921 the department published the first of a monthly publication known as the 'New Zealand Education Gazette', which became a regular method of correspondence to schools and other educational organisations, thus confirming the department's control over many aspects of education.

During the 1920's just as it seemed that the Boards were losing almost all control over the staffing and internal organisation of schools, economies were demanded. Criticism about board management from the department especially over financial matters led to more control of finances being administered by the Department. In the face of the economic difficulties of the country as a whole, a new minister of Education took office with a mandate to effect economies in administration, and that by complete centralisation "economies would be effective without loss of efficiency" (Webb, 1937, 102). A memorandum presented to the Reform Committee (1929) on education advocated the complete abolition of the education boards and a series of token measures 'tacked on' to the powers

of the school committee to provide the aspects of local control. The memorandum pointed out the comparative cost of administration with the Australian States where a central control pattern provided less expensive administrative services, and produced several examples of duplication and overlapping between the boards and the department.

Although the memorandum did not lead to any legislation and that the public opinion at the time went against the abolition of the boards, the department still pressed for more authority and they, not unreasonably, asked for control of the training colleges. However, the issue blew over as a new Minister of Education, the Hon. Harry Atmore refused to be controlled by his officers in the Education Department and spoke out for the education boards in the Report of the Parliamentary Recession Education Committee 1930 (The Atmore Report).

At this stage the issues of centralised Department versus decentralised board were becoming clouded by other problems, most of them related to the growth and control of secondary and technical education. (Currie Commission, 1962, 94).

The differences between the secondary schools and the technical schools existed in part in the role that the technical colleges played in the training of apprentices and in the higher technical training conducted in their evening schools and not in the activities of their secondary day pupils.



The Atmore Report (1930) however, pointed out that the New Zealand Education system at that time had centralised enough and a list of nationalised services appeared to reinforce this attitude.

1) The appointment of teachers must be in accordance with the national grading and classification lists.

2) Schools must be staffed and salaries paid in accordance with a national scale.

3) There are no longer district scholarships only National Scholarships.

4) Boards have no Inspectors of Schools - the inspectorate has been nationalised.

5) Grants for sites and buildings have been nationalised and applications are assessed on merit irrespective of the district.

Central control was criticised first when in 1922, the department decided to adopt an intermediate school system<sup>but</sup> the rigid compartmentalisation of administration between the District High Schools (centrally administered high schools which were basically extensions of the primary school), autonomous secondary schools and autonomous technical schools and the primary schools hindered the adoption of this innovation.

The hindrance to educational development was basically the battle between the interests of the centrally administered primary system and the local concern of the secondary schools; a continuation of effort was required to achieve a complete

national system of education. Attempts were made to unite the control of secondary and primary education within the power of the boards (Education Bill 1938) with the existing secondary boards reduced to the status of secondary councils with limited powers. However the Bill was rejected. "The time was apparently not opportune for its acceptance." (Campbell, 1934). However, despite no administrative changes the atmosphere of the secondary school administration changed considerably with new regulations for:

- 1) New prescriptions for 34 school certificate subjects.
- 2) The introduction of the 'crediting system for university entrance to the University of New Zealand'.

These events followed long periods of economic depression and gave new life to the secondary system; this also was followed by more co-operation between schools and the department.

To admit that centralisation was the prevailing trend during the period after 1911 would not be entirely true. Certainly the local authorities lost their independence and the majority of the powers but the decline had not been accompanied by a simultaneous development of the central department. "Effective power, the power to create and progress, has been neutralised rather than centralised." (Webb, 1932, 67).

The central system is perhaps just a negative one which rather than innovate, only protects and makes constructive change almost impossible. The economic condition of this period also

forced apparent money saving schemes on the government, centralising administration of education and other government service being one of many economy measures adopted. The tight control over board policy and spending, produced an administrative style which became highly tedious and repetitive. Local officials began to worry that they were spending too long with administration and not being able to proceed with their real job of organising inspectors and helping teachers.

Therefore amid the era of complete apparent centralisation, decentralisation continued to adopt the contrary opinion. The Atmore Report (1930) stated that a national system of grading teachers should be adopted and thus remove the greatest objection to local control and that eighteen education districts should be established (four more than had existed immediately prior to the Act of 1914). The committee members assumed that these nine new boards would control primary, secondary and technical education in their areas.

The Recess Committee saw that genuine local control was not possible in such large areas and referred to the Auckland District Survey that the board was beginning to develop into a "department within a department" (Cummings, 1959, 75). However, the scheme was considered over-complicated, it involved too much indirect election and the process of mixing properly elected members and members appointed by order in council normally developed tensions.

In the 1940's little education legislation appeared. The control of the secondary schools remained an issue that was unresolved. The war years intervened and led directly to problems of recruitment for the education service. Directly after the war however, moves were made to increase grants given to various education authorities.

#### 1948-1964

In 1948 a series of administrative changes took place which cumulatively effected a change in approach to education administration.

1) The secondary school inspectorate was decentralised and split up into three groups with their headquarters at Auckland, Wellington and Christchurch.

2) An office of the department of education was set up in Auckland under a district superintendent. The office dealt with all matters concerning primary and secondary education in the Auckland province plus the complete responsibility for Maori education in New Zealand.

3) The Canterbury University College relinquished its control over the four secondary schools which were granted with individual boards of managers, <sup>and</sup> in conjunction with two technical schools formed a 'federal union' for administrative purposes.

Reasons for an apparent rapid change to a decentralised approach was forced upon the education system by a dramatic rise in school population, the need to untangle the work load left

after the war and the immediate action needed to supply buildings and equipment. Even though the creation of new powers to the "branch office" produced some problems, a new feeling of tolerance and acceptance existed between the boards and the department (Currie Commission, 1962).

Other measures since 1930 which enhanced the restoration of the boards' powers were the formation of the Central Advisory Committee which in effect gave the boards a voice in the appointment of teachers, and secondly, the grants that the department gave to the boards were less structured by the department and more responsibility was given for the planning and building of school premises. Despite more powers being delegated to the boards, additional complications arose which highlighted the fact that what the boards still really wanted was a greater measure of authority to make its own decisions.

The Auckland Education Board in particular was sensitive to change and the curtailing of its powers. The era between 1940 and 1954 is seen by Campbell (1954) as one of stabilisation in which the boards carried on under reduced powers and authority. The era closed when Auckland, under the shock of the creation of the South Auckland Education Board (1953) from its former domain, sought a Commission of Inquiry into the function of central and local authorities.

The Auckland Board was having difficulty with the implementation of a building programme to deal with a fast growing

population and in this period of tension, all the old frustrations and delays occurred between the board and department that had appeared in the past. The result of this frustration was the 1956 Special Report (A. to J. 1956) in which the official authorities agreed to the transfer of certain responsibilities but only after certain conditions were met.

At this point the Boards certainly saw the opportunity for more control of the money they received and the way in which they could spend it. They forced the inauguration of the Joint Committee on Administration to examine the conditions under which changes in administration could be made (A.J.H.R. E1, 1951).

The committee worked with the intention of establishing a system that would ensure that children would have equal access to education and thus advocating the even distribution of schools and the provision of transport, boarding bursaries and education by correspondence. The committee considered that quality within the system was a central concern, despite the need for local understanding. The boards could not deny that the quality of staffing and building construction and design was also a central concern. However, the committee decided that increased power could be given to the boards as long as various conditions were met which included a policy of adhering to minimum standards with the right to spend money that would be left over after the attainment of these standards. The department was still responsible for a system of close checking of accounts, that minimum standards had been attained, and that the interpretation of the

approval procedures was the same for every board (AJMR E.1. 1956).

The committee was a standing committee with three members of the boards' association and three members of the department meeting every year. A primary and secondary committee was decided upon after further discussion and now both committees operated with great success.

Reorganisation within the administration was steadily developing more towards granting more power to board administration. In 1960 for example, a new regional office was set up in Christchurch. The regional offices are vested with a wide range of delegated power so that a large number of administrative and professional matters can be settled without reference to the head office (A.J.D.R. E.1., 1963). The Auckland Education Board, however, was quick to continue the usefulness of the newly established office of the department in Auckland. For example, in not having direct communication with Wellington the Board is never certain that its representations are clearly and forcibly stated in Wellington after being relayed through the Auckland office. Furthermore, when a project carries a recommendation from the Auckland office, there are not infrequently further queries from Wellington which reach the Board again by reference through the Auckland office. This procedure obviously leads to delays and irritation. (McCarthy, 1961).

This period saw the re-birth of a need to decentralise. Economic conditions after the war and <sup>the</sup> need to educate a growing

number of children within the urban areas were particularly instrumental in the developing of the need for more local control and authority with which to solve the problems. However, the formation of branch offices merely led to an increasing amount of fragmentation of the education system and friction between the boards and the department as correspondence, business and reports had to be channelled through the branch offices from the corresponding boards. The branch offices maintained control of the kindergartens and post-primary needs while the boards administered primary education.

The formation of the branch offices, a Standing Committee of Education and more financial autonomy for the boards undoubtedly gave the system a more decentralised outlook. However, to what extent was this purely fragmentation wherein little control was devolved is the important question to ask. Once the department had gained control over the finances they were in a position to authorise checking of accounts<sup>and</sup> sending of reports and generally maintained rigid control over the boards. Therefore the theoretical benefits of decentralisation seemed to be overshadowed by the boards and other local authorities constantly having to be monitored and assessed by the central authorities.

#### 1964-1979

This period followed the guideline set down by the "Report to the Commission on Education in New Zealand 1962" known as the Currie Report. In reviewing the recommendations on administration of education four basic principles are highlighted<sup>†</sup>:



- 1) That education should continue to be centrally financed.
- 2) That local interest should be preserved and strengthened by the further development of local institutions.
- 3) That a balance should be kept between central and local power.
- 4) That delegation of authority to the local institutions should be as great as possible under a system of central financing.

Therefore within the confines of a centrally organised system, power and control should be devolved as far as possible without the breakdown of a centrally organised financing system. How far genuine decentralisation can proceed without major control over spending is an issue which remains to be seen, but various methods of devolving financial responsibility can be evolved, for example through the increasing usage of block grants which allow local authorities to spend on whatever they feel would benefit their community.

With the aim to decentralise and reorganise educational administration at the district level, the standing committees developed to discuss their areas. They were seen as a method of formal consultation between the department and the main controlling authorities in the primary and secondary field (A.J.H.R., 1967). It seemed a relevant move to transfer decisions relating to the education boards to the Standing Committees, as it gave authority to the body representative of the boards and of the department.

1974 saw the publication of the 'Nordmeyer Report' on "Organisation and Administration of Education" and its recommendations saw need for more decentralisation and more direct positive initiative:

more is needed than the rationalism of administrative services, within each district. The governing bodies of secondary schools and pre-schools should assume greater responsibility for deciding on priorities for capital expenditure, replacement and maintenance.

Other measures outlined in 1974 included the introduction of teachers and students onto school boards and councils of Teachers Colleges and <sup>the</sup> Auckland Regional Authority submitted a proposal to enlarge its Whangarei office and provide a better service to Northland on an interim basis until formal decisions were reached. Discussions also were initiated with the aim of splitting up Hawkes Bay, Southland, Otago, Nelson, South Auckland and Canterbury Boards into more localised units, with the result that in 1978 an office in Gisborne was set up to organise the joint administration of primary and secondary schools on the East Coast. Gisborne Area <sup>part,</sup> re-organisation of the remaining areas has proceeded little apart from the enlargement of district offices in Dunedin, Whangarei and Nelson (A.J.H.R., 1979, E.1.)

The aim of board reorganisation has now realigned itself to the idea of developing a more unified unit, an administrative unit that would consist of a council and its supporting staff, as well as a central department of education and separate governing bodies for the individual schools. This would enable a unified grant system for capital works and maintenance. It would also allow for a unified inspectorate. Politically such a change

would be difficult as it would mean substantial changes to the present individual system of secondary school boards, school committees and education boards. However, more efficient administration would undoubtedly follow.

The central department of education however, has succeeded in a reorganisation. A working party in 1975 proposed that the head office should reorganise the top management of the department on the basis of corporate management which would allow firstly more effective co-ordination and secondly, decentralisation in decision making and lastly reduce the span of control and move towards co-ordination between various systems within the department, rather than on sectors within the department i.e. primary and secondary education.

The Regional Office structure has also come under review in recent years. In 1978 it was agreed that the district inspectorates should transfer to the control of the regional superintendents during 1978, and cease to be responsible directly to the department. The Nordmeyer Report begins to acknowledge the cost factor in reorganisation and states that, with the proviso that each additional regional office is likely to result in some extra costs and, if the region kept all their functions, there is a case to bring the department into closer contact with those districts and provide two or three more regional offices. (Hamilton, Palmerston North and Dunedin being possible locations).

The general feeling that decentralisation is a theoretically

feasible goal for educational re-organisation permeates present thought on educational re-organisation; however, difficulties arise in overriding the legacy of the past and finding finance to open new offices and develop new systems. A balance perhaps, is fast being attained between idealism and financial practicality. However, it is still significant that in our form of parliamentary democracy the final control over the expenditure of public money raised by national taxation is retained by central government and therefore this system will inevitably impose limits upon the autonomous powers of local authorities (Taylor, 1977). Although the central department is responsible through a minister to government for the efficient running of the education system, the vast bulk of the public money voted by Parliament for education is disbursed by an extensive network of local authorities with wide powers of their own. This system seems administratively unnatural and problems that occur would not arise if the system was truly centralised or thoroughly decentralised. However, it is the system that has evolved and works today.

The importance of a historical viewpoint that outlines the basic steps in a process is acknowledged by Harris (1977, 181-190). "In a very real sense, the structure of educational systems is a by product of their history", but then argues that we are not prisoners of history and that the capacity of modern systems to make radical changes is becoming noticeable. However, New Zealand's system does reflect its history as the relationship between the boards and the department today is a product of the gradual and inexorable shifts of power and function

of the past. Certainly the relationship has improved since the efforts of the department in the 1930's to abolish the boards, and positive moves have been made toward the devolution of decision-making. However, there is still a reluctance on the part of the local controlling authorities to estimate the advantages of change to a unified control at the district level, thus indicating that a strained relationship exists still between the board and the department.

The structure of the system today still reflects the nineteenth-century origins, when primary schooling was provided for everyone but secondary education only for the social and intellectually elite. Separate secondary schools are still typical although nowadays nearly everyone continues to at least Form V of the secondary school, and an increasing proportion to Forms VI and VII (Nordmeyer Report, Education Department Conference, 1974).

The structure is further complicated by the fact that during the past half century, separate intermediate schools have developed to which rather more than half of the relevant age group now go rather than attending the top two classes of the primary school. Intermediate schools fall under the jurisdiction of the education boards as do the primary schools. The education board selects and employs teachers and decides how grants for school maintenance shall be spent, it formulates building programmes and (subject to the Government providing the necessary funds and approval) it purchases sites and designs the new buildings. The boards also administer grants for furniture, equipment, text-

books, libraries, transport and other purposes. It also provides services for other bodies such as accounting services for school committees and secondary school boards when they need them.

The school committee manages each primary and intermediate school. It is an organisation that provides for school maintenance from an 'incidentals' grant and spends money that is raised by the school. Its powers are limited and are restricted to the authority to suspend a teacher, to employ cleaning and caretaking staff and to authorise the use of the school buildings out of school hours.

Secondary schools are generally administered by a board of governors. Usually one board will manage a single school, although several boards in some cases are amalgamated into one authority. As with the education board, the board of governors is an employing authority yet in other ways it is similar to a school committee. However, despite the secondary board having more functions it is not in a position to employ a substantial number of administrative staff. In a few cases (e.g. Christchurch) the secondary boards in a locality have federated into a secondary school council to provide themselves with common services such as accounting, secretarial and payroll servicing. The secondary boards are not required to undertake functions such as the planning and building of new schools or the administration of maintenance grants. Here decisions are carried out by the regional offices of the department.

The monitoring and regulation of the processes of education itself rather than the provision and servicing of the infrastructure of education is a more complex issue. The school committees, education boards and secondary boards of governors have in practice only a limited authority in these fields. The Minister and the Department of Education however make the major decision in the field of what subjects should be taught and what the syllabus will be; controls the inspectorate, provides administrative and professional leadership, channels the education vote to the controlling authorities and exercises a certain degree of control on educational development.

This chapter has tried to concentrate on the shifts between central and local control and moreover it provides a series of real events in history that can be used to indicate why the shifts between decentralisation and centralisation occur. The conclusion that can be drawn is that the shifts are the result of a complex variety of economic and political circumstances but whenever change is imminent it has been a topic of continual conflict. Although the rates at which changes occur have varied and periods of relative stability have occurred, it seems that the point of balance between local and central control has not been attained and shifts between the two poles have occurred continuously since the beginnings of New Zealand's education system.

Conflict therefore has been a constant feature of the development of administration; however it seems recently that the

boards and the central authorities have found considerable areas in which they agree and this alone indicates a more balanced and settled administration. Other opinions (Hughes, 1977; Taylor, 1977) recognise that real control follows the power of the purse and that few changes can occur today unless the central authority relinquishes its financial control attained in the early nineteen hundreds.



## CHAPTER II

## THE EVOLUTION OF NEW ZEALAND'S EDUCATION ADMINISTRATION SYSTEM

Much of contemporary geography uses the assumption that there is an inherent geographic order to human society, and that there is a "spatial anatomy of human behaviour and organisation which has regular and discoverable characteristics." (Soja, 1971, 11). In this study a political development is traced that has definite spatial connotations. The path towards decentralisation for instance, has been outlined in general and a model created to show the pattern of development (Massam, 1972). However, other researchers have elaborated on the different spatial arrangements attained through varying political environments.

This chapter will confine itself to analysing the evolution of the administration of education. Several viewpoints express that the end product of administrative evolution is centralisation (Ellis, 1950. Massam, 1975. Roterus, 1975). Here, analysis will review the relationship in the form of distance between schools and their administrative centre. Differing structural patterns will effect the process of decentralisation and consideration of structure through four time periods will allow observation of trends in structural change which will give a basis on which conclusions from the following chapter can be compared.

Despite the relatively small changes in the structure of education administration since 1914, the complete evolutionary

process can be monitored. For example the beginnings of a movement towards centralisation in 1914 reduced the number of boards of education, therefore showing a relationship between a strong historical thrust towards centralisation and a structural change. However re-arrangement of administrative units can occur for a variety of reasons that are related to the style of government and the powerful factors therein, and not necessarily allied either to decentralisation or centralisation.

Many studies have reviewed the evolution of administration, a short review here will allow the reader to realise how the theories that will be used more extensively in this chapter have developed. The pioneering work of Prescott (1965) in the geography of boundaries and their political significance concluded that the boundaries of most types of administrative areas are basically artificial, while the 'hearts' of areas are 'real'. He declined to reveal any revolutionary trends in the division of space into political units. Soja (1971) researched into cultural evolution and developed a perspective which goes beyond concepts of the nation state and western ethnocentrism. He regards the central state as an organisational form, but in relative terms to a larger number of socio-political organisations created by man.

The standard evolutionary taxonomy derived from the works of such leading cultural evolutionists as Steward (1963), Sahlins (1960) and White (1959) postulates the existence of at least four basic types of human society, which will in turn create different spatial patterns through their varying political structures.

- 1) The small-scale hunting and gathering band.
- 2) The kinship based ethnic society usually called 'the tribe'.
- 3) The transitional chiefdom, with its greater political centralisation and differentiation yet prevailing focus on kinship.
- 4) The fully centralised, often ethnically heterogenous state.

Although the modern world is dominated by the nation-state, there appear many linkages from earlier forms of socio-political organisation particularly with respect to the ties of ethnicity, which may help to explain variation in the world's spatial political organisation today. Kinship also proved to be a dominant organisational principle, but with the need to administer interaction and exchange within growing and productive societies, centralisation, through the related emergence of a hierarchical stratification based upon wealth, prestige or power emerged. At present the modern command of transportation and communication techniques has allowed control of large areas by a central government, so that despite the development of dispersed patterns of activity within a certain area the system can still be centralised. At one time the 'small scale hunting and gathering band' was the largest set of people that could be kept together and co-ordinated, but now with a fully centralised state, control can be extended over a vast area.

Whebell (1968) proposed a five stage theory of 'politico-territorial' evolution whose qualitative concepts involved the

examination of the division of space for administrative purposes. Massam (1972, 129-130) forwarded 'a conceptual framework for the spatial Evolution of Administrative Systems' (Figure 1) determining six consecutive time periods each of which denotes an administrative stage. Although the development of New Zealand's Education Administration differs in some respects from the stages outlined in the Massam model, the framework provides a suitable model with which to compare the New Zealand system. Figure 1 relates the categories of the Massam model to the time periods adopted in Chapter 1 and describes the state of education administration at each of Massam's stages in the Evolution of Administration. The stages outlined in the conceptual framework can be regarded as a sequence of circumstances in a competition between a completely centralised service system with a single administrative centre and no local subdivision, and complete decentralisation, whereby each individual subdivision provides the services it requires. Although education administration does not follow a constant path towards decentralisation the model serves to show how education administration does display a decentralising tendency as many of the Massam stages follow changes in the education administration.

Figure 2 shows the boundaries and administrative centres for the systems in 1876, 1890 and 1914, and 1978, thus monitoring the differing pattern of education board boundaries since 1840. The general pattern shows an increase to thirteen districts during the 1877-1913 time period, from the original eight of the Provincial Period (1870) thus complying with stage IV (b) in the

conceptual framework. The Provincial Period allies itself with Stage IV (a).

The amalgamation of the boards in 1914 again shows compliance with Stage V (a). The only other change in actual boundary delineation was the 1952 division of the Auckland education district into South Auckland and Auckland, resulting from an increase in urban population and the development of Auckland Education Board as a relatively 'out-size' administrative unit in the early twentieth century.

This chapter concentrates on an evolution of a spatial pattern, an evolution that is affected by different types of government and differing ideologies. A powerful personality within a government can influence forces to administer large changes in education administration. The altering of spatial patterns within the context of administration therefore relates to the varying social and economic factors described in Chapter 1 that pay close attention to historical detail. However, standard evolutionary traits exist with the evolution of New Zealand's Education System as the basic stages of the growth of the administrative system comply with the Massam model.

Whitney (1970, 18-26) studied the development of early Chinese administration and serves to illustrate this point. Whitney reviewed the evolution of varying territorial administrative hierarchies and noted significant secular and spatial variations in the size of areas at any particular

level. He concluded that

much of the waxing and waning of echelon growth can be traced to the problems of bureaucratic control and co-ordination .... reforming and unifying dynasties have usually attempted to start their rule with a clear administrative slate by abolishing most of the echelons between the centre and the counties, only to find with the passage of time and the exigencies of bureaucratic and regional control that they were forced to re-assemble them again.

#### Spatial Evolution of Education Administration

There is a large body of literature dealing with the description of geometrical properties of the distribution patterns of man and his activities. Within this chapter it is hoped to analyse the state of the administration of education through four time periods, 1874, 1890, 1914 and 1978. Through the complete study, analysis has focussed upon the education boards that essentially administer primary (including special), Intermediate, District High and Area Schools. Although the boundaries of education boards have changed relatively little in recent years it is still worthwhile to review each small change so that adequate comparisons can be made throughout the history of education administration. The time periods were selected with regard to the availability of data on one hand (basically geographical location of schools) and the relationship with the Massam model on the other.

Fig. 1: A CONCEPTUAL FRAMEWORK FOR THE SPATIAL EVOLUTION OF ADMINISTRATIVE SYSTEMS

Time Period	State of Area	State of Administrative System (Massam's stages)
t <sub>i</sub> pre colonial	unknown and unsettled	No spatial units.
t <sub>ii</sub> 1835-1842	explored but unsettled	Some boundaries may be shown on maps to claim sovereignty of area.
t <sub>iii</sub> 1843-1853	settled in part	The settled part may be subdivided into distinct areas.
t <sub>iv</sub> (a) 1853-1876	expansion of settlement	New areas defined.
t <sub>iv</sub> (b) 1877-1913	density of settlement increased	Subdivision of existing areas to maintain small units.
t <sub>v</sub> (a) 1914-1920	density of settlement increases	Amalgamation of small units to take advantage of economies of scale.
t <sub>v</sub> (b) 1921-1930	communication systems improve with transport innovation	Centralisation and standardisation in the quality of administrative service.
t <sub>vi</sub> 1930-1978	Modification of demand and supply as values change, population density changes & distribution mechanisms change	Areas may be modified to amalgamate different functions. Areas may be kept at a level which explicitly does not take advantage of economy of scale, but provides standards of service. Affluence of community may encourage quality-cost consideration of pure economic reasoning.

Fig. 1 continued

Time period	Stage of Education Administration
t i pre colonial	Nil
tii 1835-1842	Wakefield type settlements (Wellington 1840, Taranaki, 1841, Nelson, 1843) Educational facilities for the European Settlements organised on a local basis.
tiii 1843-1853	Respective settlements were geographically isolated from one another. Sir George Grey's Ordinance of 1847 introduced a system of state aided denominational schools.
tiv (a) 1853-1876	Provincial councils formed which controlled most aspects of education admin. of Province.
tiv (b) 1877-1913	National system of education developed in order to hopefully attain uniform standards throughout the country. 13 boards created to decentralise authority.
tv (a) 1914-1920	1914 Education Act heralded the beginning of more central control. Amalgamation of 12 education boards into 9 in 1915.
tv (b) 1921-1930	Centralisation of Inspectorate, teacher grading and administration. Governments aim to abolish boards.



Fig. 1 continued

Time period	Stage of Education Administration
tvi 1930-1978	Administration modified to meet the needs of:- 1) an increasing urban population. 2) equality of educational opportunity. 3) a balance between central and local control

Source : Massam 1972

The time periods link with the following stage of the Massam Model:

- 1) tiv (a) (1874) (expansion of settlement)
- 2) tiv (b) (1890) (density of settlement increases)
- 3) tv (1914) (communications systems improve with transportation innovation)
- 4) tvi (1978) (modification of demand and supply on values, population density, distribution mechanisms change).

The complete period 'tv' is represented by '1914' as a complete list of the location of schools from the 1920's to the 1960's, was not readily available. However during the period from 1914-1979 relatively little change occurred in the boundaries of the education districts. Therefore three basic spatial systems occur:

- 1) 1870 (the provincial period)
- 2) 1890 (post 1877 Education Act System)
- 3) 1978 (today's administrative system following the 1914 Education Act).

Measurements are included for 1913 in order to measure the effect that a substantial increase of population would have on the patterns being measured, within the confines of the same system.

Indices of shape, compactability and spatial efficiency are computed in order that several aspects of spatial analyses can be made. Analysis is carried out for each time period. Techniques have been employed normally on a basis of simplicity and ease of calculation.

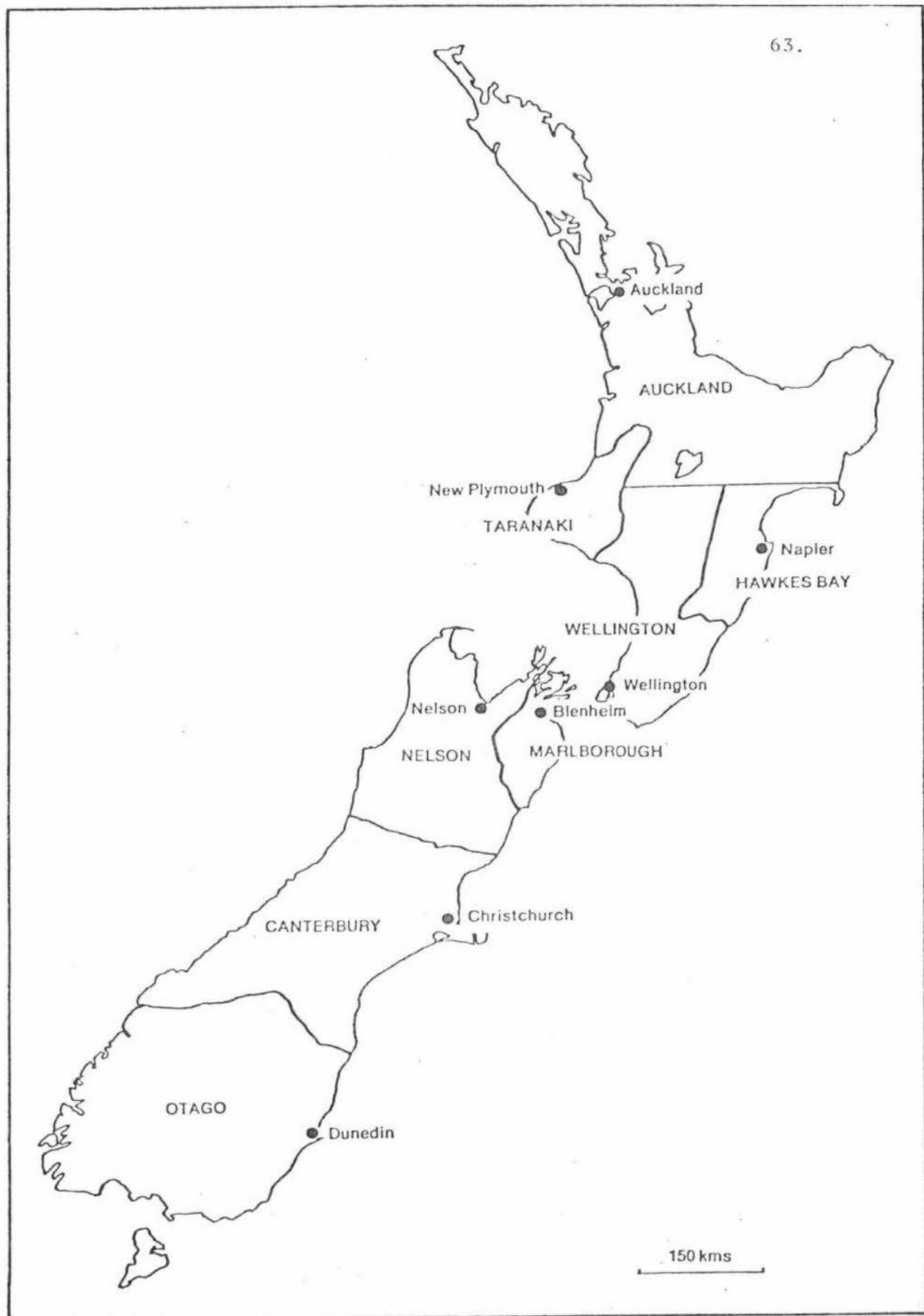


Figure 2: Boundaries and Administrative Centres of Education Districts in 1870.

Source: Atlas of New Zealand Regional Statistics 1968.

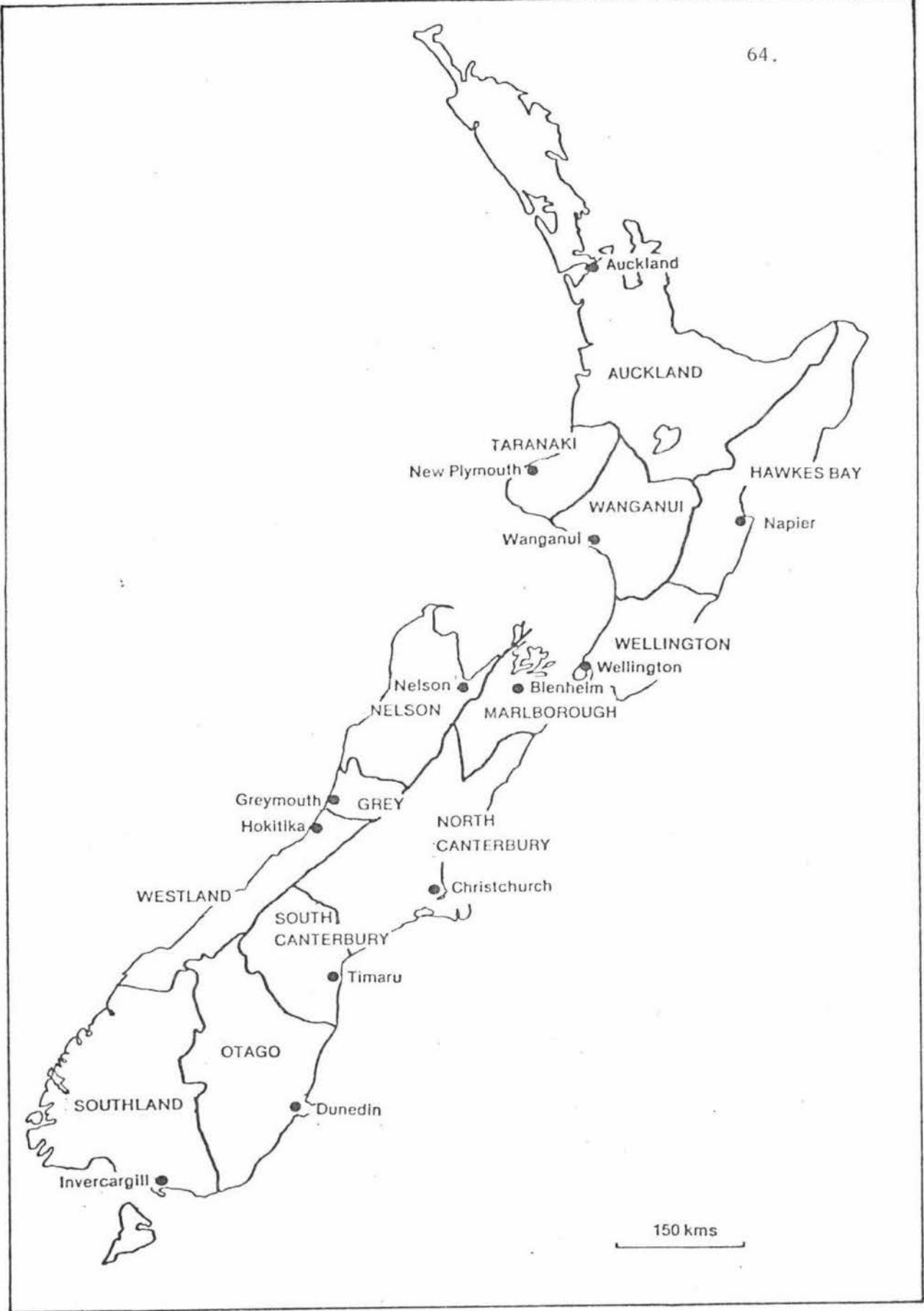


Figure 2: Boundaries and Administrative Centres of Education Districts in 1870 and 1914.

Source: Atlas of New Zealand Regional Statistics 1968.

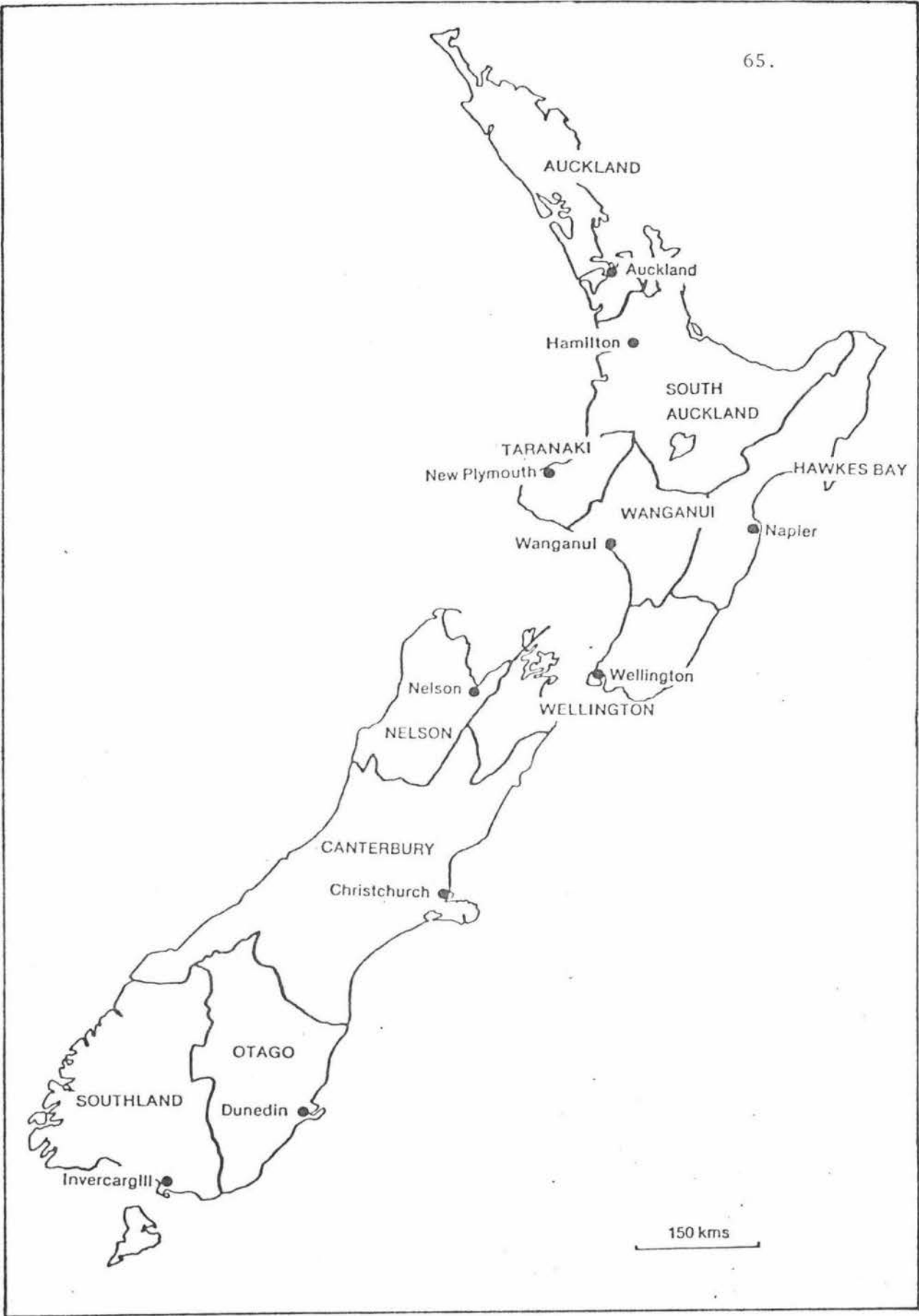


Figure 2: Boundaries and Administrative Centres of Education Districts in 1870 and 1914.  
Source - Department of Lands and Survey 1978.  
Areas Administered by Education Boards.

Using theoretical techniques to estimate measures of shape and compatability assumes that Euclidean space can be treated in the same manner as earth space, but, the criticism is, that earth space consists of a surface of varying friction i.e. points are not connected by a straight line but by a variety of methods, few of which actually move in a straight line. Therefore a diversity of roads, networks, modes of transportation and conditions all make up earth-space which will show varying degrees of accessibility.

Another conceptual difficulty arising when using the concepts of a straight line distance within a model is that the administrative system being measured may take on an entirely different shape if constructed in terms of time-space, cost-space, or effort space. All three concepts are relevant to the study of the spatial development of administrative units.

#### Derivation of Shape Index

Efforts to determine shape measurements have been offered by Blair and Biss, 1967, Bunge, 1962, Haggett and Chorley, 1969, and Lee and Sahee, 1970. Empirical works by Haggett on the administrative districts of Santa Catarina state, Brazil between 1872 and 1960 used a simple yet effective shape index to compare the change in administrative units. The Shape Index (S) was given by:-

$$S = (1.27A) / l^2$$
, where 'A' is the area of the country in square kilometres and 'l' the long axis of the country drawn as a straight line between the two most distant points within the perimeter. The multiples (1.27) adjusts the indices so that the circle would have an index of 1.00 with values ranging downwards

Table 1: Indices of Shape

Education District	1870	1890	1913	1978	Time Period
Auckland	.282	.467	.467	.152	
Wanganui		.780	.780	.780	
Taranaki	.476	.576	.576	.576	
Hawkes Bay	.288	.206	.206	.206	
South Auckland				.680	
Wellington	.330	.494	.494	.218	
Nelson	.448	.324	.324	.324	
Marlborough		.390	.390		
Grey		.373	.373		
Westland		.126	.126		
Canterbury	.408	.366	.366	.408	
South Canterbury		.518	.518		
Otago	.634	.517	.517	.517	
Southland		.500	.500	.500	
Mean Average	.415	.433	.433	.436	

to zero. The actual measurements recorded for the education board areas of New Zealand range from .780 for Wanganui (tvi) - a compact near circular unit to .126 for Westland (tiv (b)) - an elongated unit. Table I shows the Indices for three different spatial systems reviewed, 1870, 1890-1913, 1978.

#### Derivation of the Moment of Inertia

The measurement of compatibility, or alternatively the distribution of points or schools around a centre or education board is normally indicated by the Moment of Inertia. It was originated in the field of pure mechanics and was concerned with measuring distribution of mass about a point. Massam and Goodchild (1972) employed this index to examine the shape of administrative areas in southern Ontario. A measurement is derived for each district, in each time period, including each area for 1890 and 1913. This particular comparison is useful to demonstrate the changes in the dispersion of schools within the same administrative structure. All distances measured were 'air-line' distance.

The formula used:

$$I = \sum r^2/n$$

where I = moment of inertia

r = distance of the school from the administrative  
centre

n = number of schools in the administrative area



TABLE 2: Moment of Inertia Indices

Education District	1870	1890	1914	1978	Time Period
Auckland	484	1610	1842	2035	
S. Auckland				1771	
Wanganui	14	531	873	656	
Taranaki	7	140	153	489	
Hawkes Bay	241	598	1124	1410	
Wellington	669	585	1029	989	
Nelson	118	755	936	543	
Marlborough	40	216	358		
Grey		126	176		
Westland		429	373		
Canterbury	447	686	1193	1808	
S. Canterbury		255	303		
Otago	176	992	1223	950	
Southland		761	883	736	
TOTALS	2196	7684	10466	11387	

In computing the moment of inertia for each administrative area a relative measure of compactness is offered. The index is also known as the Standard Distance (Davis, 1974), when the square root of the total is calculated. Table 2 shows the Moment of Inertia for each district in each time period.

We now calculate the centre of gravity of the distribution of schools and locate the points on a grid-system (5 km squares). The X co-ordinate of the points was calculated by combing the 'X' co-ordinate values and dividing by the number of schools therefore calculating the mean value for x. The same procedure was applied to the 'y' axis. The point (Xcy, Ycg) was then marked on the original map of the administrative area. Thus we are combining the mean values of two separate numerical distributions, scaled along different axis, to find the 'mean centre' of a spatial distribution. The new centre is at the point of minimum aggregate travel (Court, 1964). A discussion on the advantages and disadvantages of the point of minimum aggregate trend is given by Watson and Gandy (1972) and Vergin and Rogers (1972).



Figure 3: Actual Administrative Centre and Point of Minimum Aggregate Travel in 1870.



Figure 3: Actual Administrative Centre and Point of Minimum Aggregate Travel in 1890

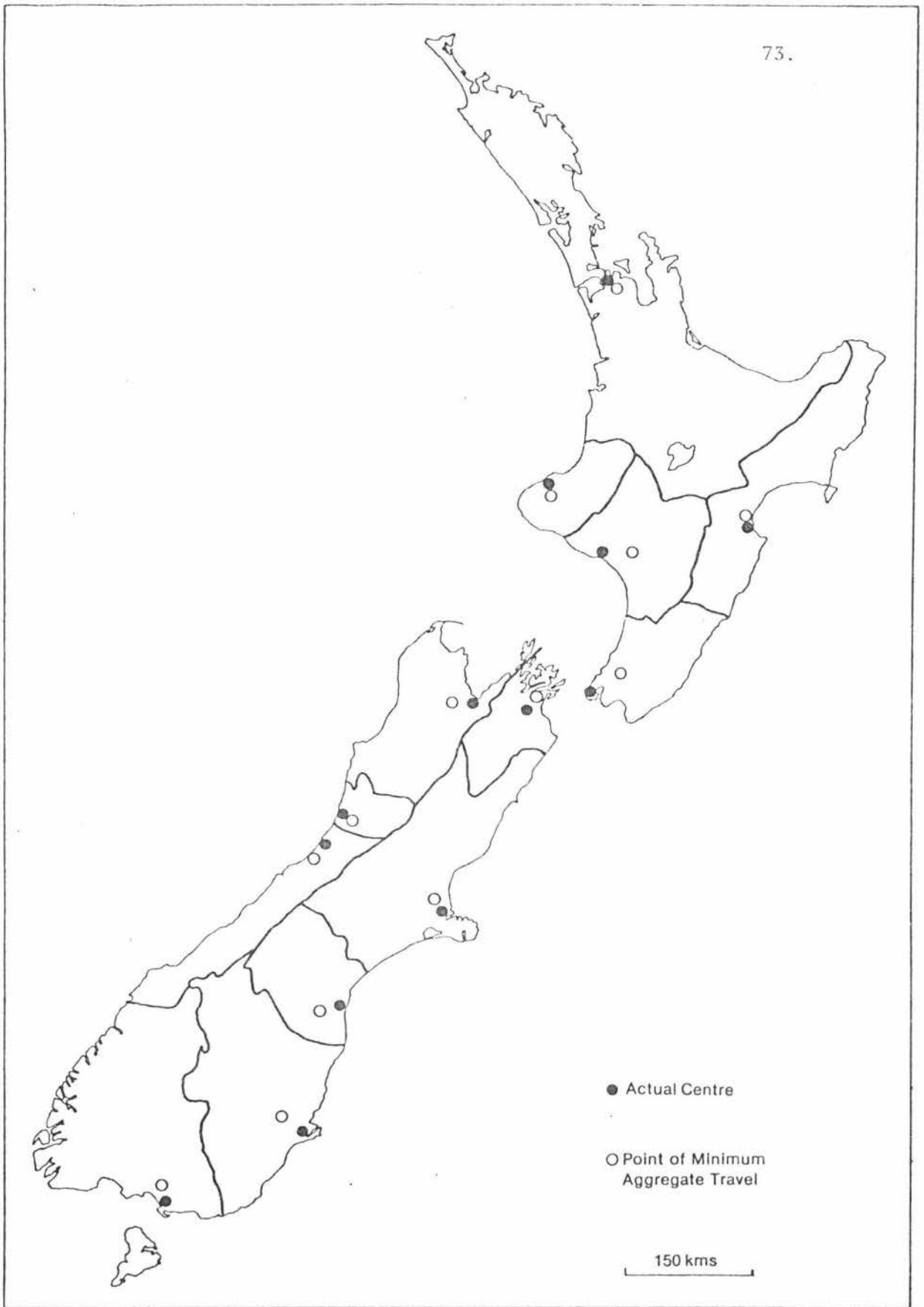


Figure 3: Actual Administrative Centre and Point of Minimum Aggregate Travel in 1914



Figure 3: Actual Administrative Centre and Point of Minimum Aggregate Travel in 1978

### Derivation of the Index of Spatial Efficiency

If the procedures for the calculation of the Moment of Inertia is applied to the point of minimum aggregate travel, the two values 'Mg' (moment of inertia of the centre of gravity) and 'Mb' (moment of inertia of the original centre) are derived. We can now define the Index of Spatial Efficiency (E) as

$$E = \frac{Mg}{Mb}$$

If this equals 1.0 then the original administrative centre is at the centre, this system being measured would be 100% effective in terms of its administrative centre being in the 'mean centre' of its distribution of schools. This being an ideal position with which to administer educational services throughout a district as all schools will be located as near as theoretically possible to their administrative centre.

Generally, as the value of E becomes smaller the distance between the actual centre and the theoretically located centre increases. It is important to note that when calculating 'Mb' or 'Mg' we use the square of the distance, therefore points which are twice as far from the centre carry a weight of four times. Therefore variations in the distribution of schools will also affect the index of efficiency as well as the distance of the optimum administrative centre from the actual administrative centre.

The varying patterns created by the position of the optimum centre in relation to the actual given centre are given in Figure 3. The Indices of Efficiency are shown in Table 3. The

Table 3: Indices of Efficiency

Education District	1870	1890	1912	1978	Time Period
Auckland	.940	.990	.950	.635	
Wanganui		.912	.895	.885	
Taranaki	.913	.964	.709	.756	
Hawkes Bay	.725	.917	.335	.845	
South Auckland				.742	
Wellington	.756	.545	.553	.870	
Nelson	.848	.605	.795	.826	
Marlborough		.779	.800		
Grey		.961	.662		
Westland		.760	.748		
Canterbury	.876	.811	.678	.786	
South Canterbury		.885	.875		
Otago	.832	.828	.648	.758	
Southland		.678	.666	.640	
Mean Average	.840	.818	.752	.779	



relatively high indices in a lot of cases being the result of the school system distributing itself around a dominant and developing centre within a region. However, there are exceptions which will have interesting connotations for proposed re-organisation of education districts.

The mean average shows a declining trend over the four periods studied (Figure 5). However a correlation between the number of schools per time period and mean efficiency index per time period (-0.949) indicates that the larger the system the more inefficient it becomes. However correlations between education districts and the number of schools within them, for each individual time period, does not bear out the same relationship (1870:0.028, 1890:0.182, 1913:0.303, 1978:0.494). An empirical study of the spatial efficiency of eight administrative agencies in Ontario has been undertaken by Massam and Burghardt (1968) employing the E Index. The mean value of E for each agency was calculated. The Department of Education in Ontario for instance, had a mean index of .760 which compares with the 1978 index of .77 for New Zealand's Education Board District. Massam and Burghardt's values ranged from .860 for the Ontario Hospital Services Commission to .679 for the Ontario Hydro-Electric Commission.

The 'E' Index provides a standard which can be used as a starting point for further analysis, but, for complete comprehension of the spatial aspects of administration, an examination is needed of the exchange of ideas plus other aspects of administrative services, such as the links provided by mail and telephone services.

However, with the transmitting of goods and conveying of people, the spatial form of the administrative system as measured via the 'E index' is significant in assessing efficiency. One of the main functions of education administration is to provide a service that is easily accessible for teachers, parents and school committee members. The board must also develop a close personal knowledge of schools which is often enhanced by the position of the board in relationship to the distance from the schools it administers. In a few cases more efficient communication lines have eliminated the problem of distant schools. Board offices must be equally accessible to committees, parents and teachers, who perhaps, cannot get access to alternative forms of transport.

A personal visit to the board officer, by a committee member from distant schools for instance, is seen as developing personal relations with officers who perhaps would seldom visit their school. Again the relative position of the board is important in developing the personal relationships between committee members and the board administrative staff.

The 'E Indices' when compared over the time periods have shown a declining trend, but it seems reasonable to assume that this trend can be offset by the increasing efficiency of the methods of transportation and communication adopted by education advisers throughout the time period. Therefore the 'E Index' provides a measure with which to compare the actual systems throughout the time periods but the responses to the systems would range according to the methods of transport of the day.

### Analysis

The Shape and Efficiency Indices are independent of scale, therefore a large area or a complex system can be measured as being just as efficient or inefficient as a small area or a simple system. The decision maker, will need to compare the effectiveness of various regions in terms of measures that are independent of scale, as well as taking into consideration scale factors such as areas and population. Thus the Moment of Inertia Index is dependent upon the number of schools in each district, as well as the distribution of points around a centre.

The Moment of Inertia Indices generally reflect the growth of the system (Figure 4). The total number of schools in 1870 (295) reveals a small total, in comparison to the other three time periods: 1890 (1125), 1913 (2214) and 1978 (2221). The similarity between 1913 and 1978 in the number of schools despite the increase of school population from 146,666 to 442,897 can be explained by the increase in the size of the schools. Also, as an economy measure during the 1930's, many small, one or two teacher schools, in rural areas were closed, thus forcing rural children to travel further and contribute to the increasing size of school.

Nevertheless in taking into account the relatively small increase in the number of schools from 1913-1978, there is a significant gain in the total amount of inertia for 1978 over 1913. This may be partly due to the reduction in 1916 from twelve to nine

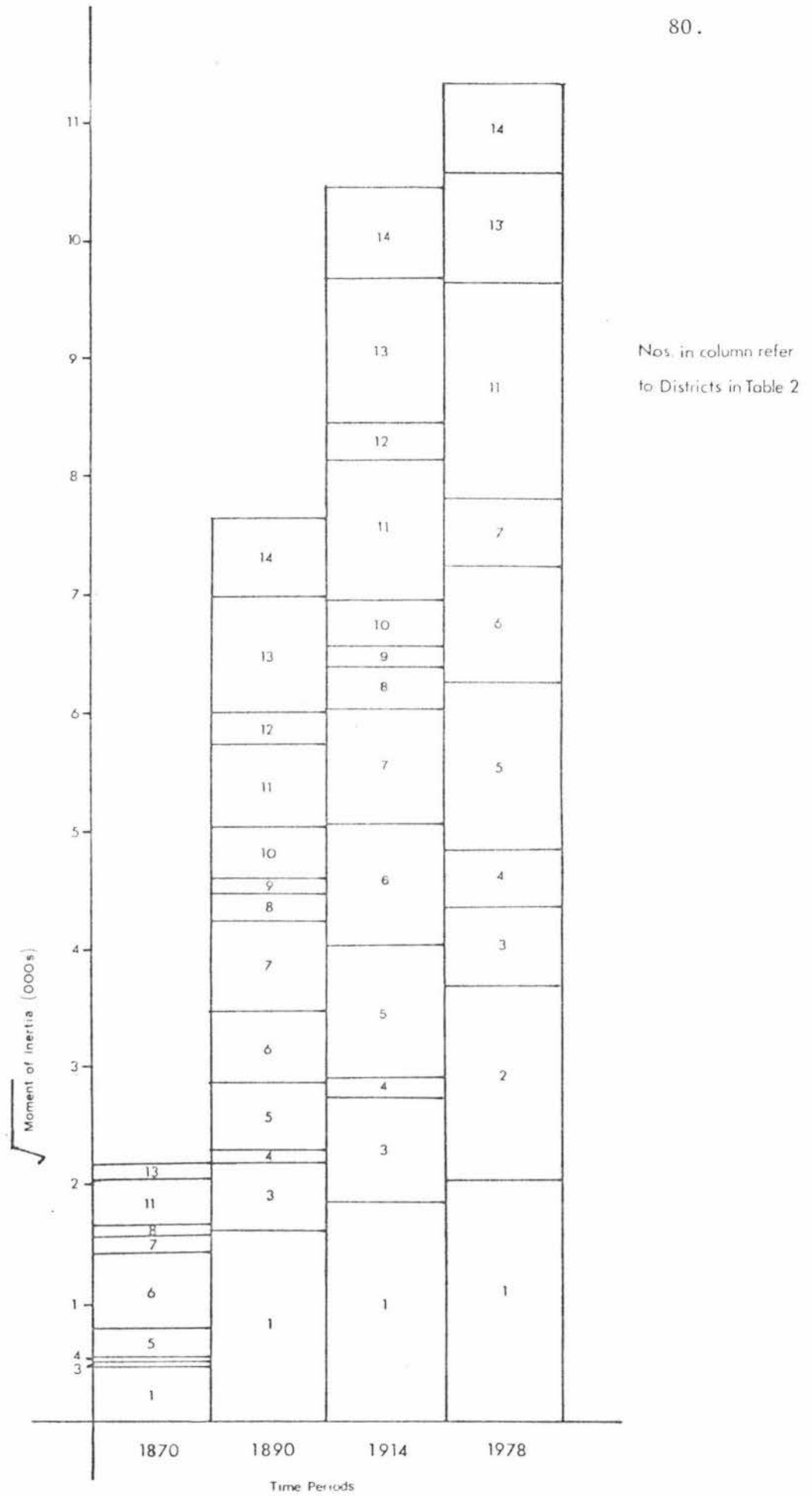


Figure 4: Moment of Inertia Indices

in the number of education boards, therefore increasing the average size of education districts. The increase of total moment of inertia in 1978 over 1913 of 921, despite the small number of extra schools, is highlighted by the difference between 1890 and 1913 of 2782 which represents a 47% increase in the number of schools. The percentage difference between 2214 schools in 1913 and 2221 schools in 1978 is an increase of 0.3%. There was no structural change in administration between 1890 and 1913.

This indicates that perhaps the smaller number of districts, or the larger the education district area, the less compact the districts become. Compactability itself is an important factor when taking into account the spatial efficiency of a system. This finding allies itself with more extensive study by Massam and Burghardt (1968, 132) who concluded that:-

the agencies with the lower values are the more compact. Further, it is postulated that there is a functional relationship between the total value of the moment of inertia for the agency and the number of administrative areas used by the agency. A regression analysis yielded a correlation coefficient,  $r = -0.943$  with a standard error of 0.063.

The index of efficiency is linked with the Shape Index and plotted together for each time period, (Figure 5) and represents the state of the administrative system at the time. The trends show that as mean efficiency indices decline, they bear little relationship to mean shape indices that maintain an increasing trend. The first three efficiency readings for the time periods 1870, 1890 and 1913 relate with the increasing population and density of settlement. The more complex the systems the more spatially inefficient they seem to become. Again the most

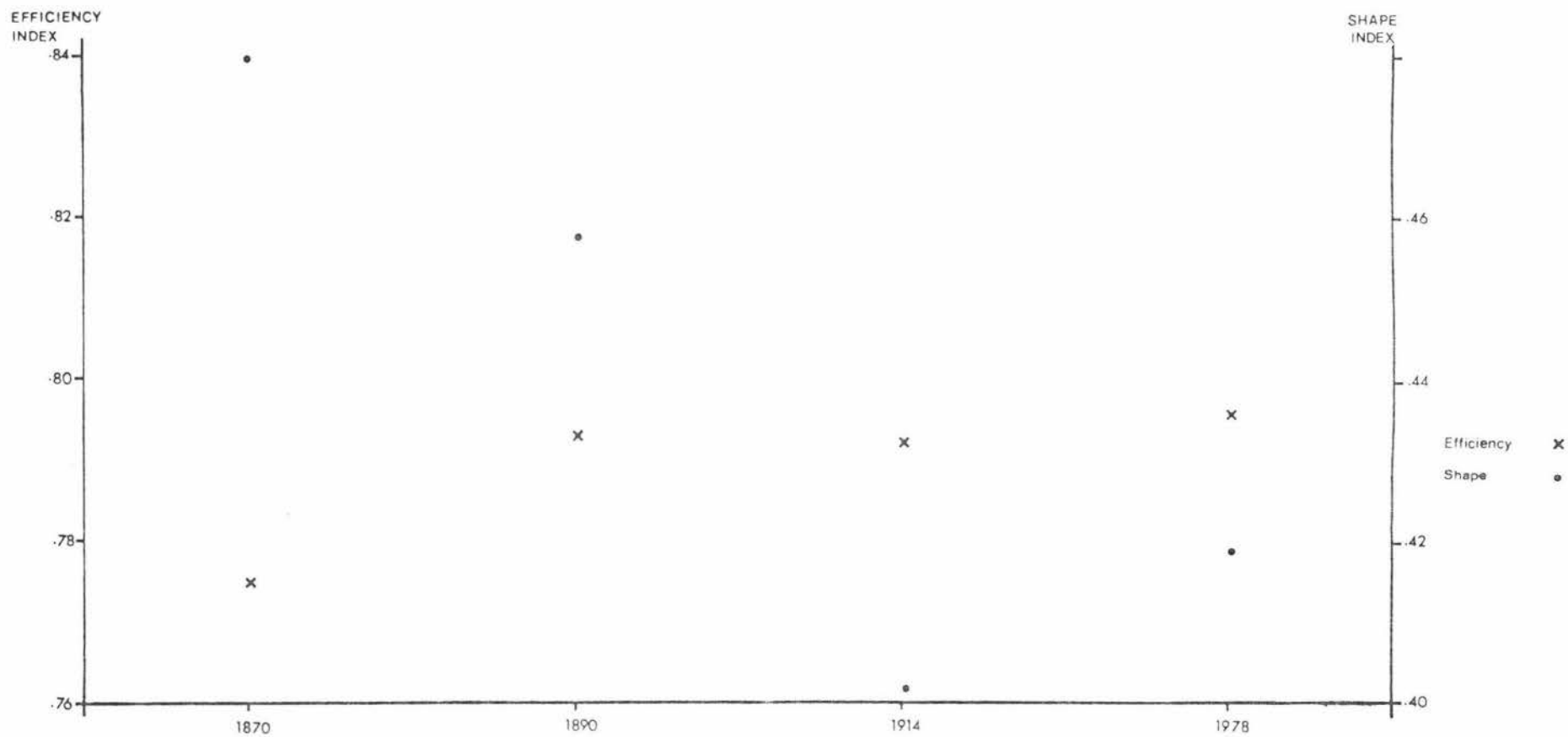


Figure 5: Mean Indices of Efficiency and Shape.

interesting comparison to draw is between 1913 and 1978 where the mean efficiency value increases despite the reduction in the number of districts. This particular finding can basically be attributed to the increasing proportion of schools within metropolitan and urban areas and the reduction in the number of rural schools thus increasing the cumulative access of schools, to their administrative centre, and raising the efficiency indices.

For example, Southland, with the lowest efficiency index of 0.640 in 1978 has approximately 55% of its schools with one or two teachers. The same situation occurs for Otago (0.758 Efficiency Index), and Canterbury (0.786) to a lesser extent. A low index for Auckland (0.635) reflects the distance of the point of minimum aggregate travel from Auckland and the division of Auckland into two districts in 1952. (1913 Auckland E Index = .950). Wanganui with a high shape index (.780) also shows a high E Index. However, this may be co-incidental as there are no significant correlations between the shape indices and efficiency indices, therefore shape of a district will have little effect on the district's spatial efficiency as measured by the E Index.

The 'Massam Model' does not allow for the decline in efficiency up until 1913, but it does acknowledge the expansion of settlement (tiv (a)) and the increasing density of settlement (tva). Therefore as 'new areas are defined' (tiv a) and 'sub-division of existing areas to maintain small units' (tiv (b)) occurs and a decentralised system operates with powerful board control, the efficiency declines. The 1978 'E' Index represents a more

centralised system, with the state of the area being described by 'Modification of demand and supply as values change, population density changes and distribution mechanisms change'. A rise in the level of efficiency however, may constitute a lack of rural education facilities, for instance as the schools arrange themselves relatively nearer to their administrative centre. Therefore increasing efficiency might only constitute efficiency in regard to administrative processes of supply which are not as important as the care of public access to educational facilities.

The 'Massam Model' recognises the distinction in relation to the last time period (tvi) "areas may be kept at a level which explicitly does not take advantage of economy of scale, but provides local standards of service." Therefore increasing levels of efficiency will not enhance this objective. As education administration in period tvi sought to meet firstly, the needs of an increasing urban population, and secondly to provide complete equality of educational opportunity, it seems that spatially these aims conflict with each other. As more schools are provided for the increasing urban population, or the schools themselves are forced to enlarge, some schools should be provided for children living in rural areas. However, provision for children that have restricted access to schools is provided via the Correspondence School, which in 1977 for example, had a total roll of over 15,000 students, although more than half were adults continuing their education (A.J.H.R. E1, 1978).



This chapter shows that spatial efficiency declined as the system evolved towards a centralised state of administration when spatial efficiency is defined via the E Index. Therefore as the system grew, the compactability, indicated by the Moment of Inertia Index, became considerably less. However, in comparing the state of the system between 1913 and 1978 it indicated that if an area is divided up into smaller administrative districts, then the system displays a more compact nature overall than if larger units were employed. Therefore structural decentralisation, or the breaking up into smaller units will enhance spatial efficiency as perceived by the Moment of Inertia. This conclusion however, is based on the limited changes in the structure of the education administration system and a comparison made over a considerable time gap.

CHAPTER III  
MOVEMENTS IN DECISION-MAKING IN EDUCATION ADMINISTRATION

Administrators and writers when considering decentralisation have, in the past, found it useful to consider the process in two ways:

- 1) Through the changing structure of the education system.
- 2) Through the changes in the locus of responsibility for decision making. (Miklos, 1972. 1).

The previous chapter related the changing structure of the education system to the development of education administration. This chapter examines the changing pattern of the locus of decision making and reviews the complex series of reasons behind the changes. When dealing with changes in the locus of decision-making, it becomes inevitable that we must become involved with explanation of the process and attempt to identify causal factors. Chapter I merely outlined the historical process and identified the rates at which decentralisation and centralisation were operating. Questions such as, 'What causes some decisions to move upward in the hierarchy and others to move downward?' or 'What changes occur in the economic and political environment to force a change in direction toward decentralisation or centralisation?' seem critical to the issue. Answers to these questions might be partly found in reviewing the attitude and ideology of politicians in regard to leadership and authority; in examining the ideas people have in their perception for the need to co-ordinate, in the availability and access to resources and, in the degree of conflict within an organisation. Each area is sufficiently important to warrant more detailed analysis:

1) Attitudes and ideologies. In somewhat loose terminology we could refer to those sets of attitudes and opinions as ideologies which form the basis of our preferences for either more or less centralised administrative structure. (Miklos, 1977, 5).

The present problem of the conflict between board and department is discussed in A Special Report on Administration in Schools 1956 (A.J.H.R., E.1., 1957) and highlights the situation on how administrators are directed by their varying ideologies. The public servant versus the board member, (elected by a school's council), is the conflict where the outcome will dictate the type of system under which schools are administered. It is scarcely conceivable that a board member would lose his seat by advocating the spending of more money on local schools. However, a Minister is not in the same situation, as his position, apart from the opportunities of expenses, is to ensure equal educational opportunities.

Equal educational opportunity, is therefore a central concern, as effort is made to maintain the quality and quantity of staff, supervisory services and provision of buildings and equipment. There are areas where 'centralising opinion and ideologies' are undeniably important, and if seen as the basic requirements for administration will cause centralisation. Those who adhere to this point of view would hold that the most important decisions should be made at the Department level, in order to utilise the decision makers who presumably have the knowledge,

experience and maturity conducive to the formation of good policies.

The proponents of local concern and local interest may also hold a common ideology; probably, that those who suffer the consequences of decisions should have a say in the making of those decisions. Advocates of this philosophy would be intimately involved with feasibility studies looking at expansion of district offices and a more unified approach to the organisation of district education. It therefore seems reasonable to suggest that generalised attitudes towards education administration may 'set the scene' for preferences towards centralisation or decentralisation.

2) Power Plays. Strong personalities can create a political regime that places officials and administration at a high level under an obligation to reset and form a 'strong type of government'. The Seddon period (1891-1901) for example was seen as one of 'stable, vigorous and enterprising government'. Existing social services were expanded and new ones initiated, and throughout the civilised world New Zealand became known as a laboratory of social experiment'. (Webb, 1937). In these conditions it could be expected that the various departments became more powerful and more centralised. However the new spirit was slow to communicate itself to those responsible for the new administration. The primary reason for this was that John Ballance, the Minister of Education in the Grey Government of 1877-79, and the first Liberal-Labour Prime Minister, was

succeeded by Seddon, who faced a provincialist-minded lobby for decentralisation. This is one example of the effect of power plays upon the political surface upon which important educational decisions have to be made. It follows that if the upper hierarchical levels do not have complete control of their power or wish to delegate it, the increasing competence of individuals at lower levels units will react and allow decentralisation within an organisation.

3) Resource Competition. The relative abundance in society of resources, will also be influential in determining whether particular decisions move upward or downward in the hierarchy. (Miklos, 1978, 5) i.e. when there is a shortage of finance, and strong competition for resources, the result may be the obtaining of control by the upper hierarchical levels with respect to the distribution of available resources. W.L. Renwick (1978, 1) in a recent Report on 'Planning and Management in Education' starts off with the assumption that

resources are scarce and there are at any time many more demands upon them than any government could possibly satisfy. One of the essential functions of the Cabinet, irrespective of which party is in power, is to be a rationing agency.

The acceptance of some means for the 'National allocation' of resources must lead to a concentration of power at the upper levels. Chapter 1 reviewed the effects of economic difficulties in the 1930's. T.B. Strong (Director of Education in 1929) presented a memorandum stating that due to increasing economic hardship the education boards should be abolished. The restriction of resources provided another argument for the abolition of the

boards and increased centralisation in the early 1930's.

Again the reverse is true, if the local education authorities can provide their own resources or there is limited competition for resources, decentralisation could proceed. Increased autonomy, however, is more likely to emerge if lower level units are not dependent for resources on upper levels of the hierarchy. Recently, concern has been shown about the effective running of education boards in the light of education cutbacks in spending.

The Education boards have to face up to the cut, in real terms, of some 5%. This country and this government are wedded to the concept of participation in education. Board members already have the utmost difficulty in programming board support for the known and recognised needs of the schools they administer, and concerned residents of school districts will see the extent of board services diminishing and will no doubt wonder whether their dedicated voluntary service is worthwhile.  
(N.Z.E.I. 1979)

The economic situation is forcing the instability at the local level.

4) Co-ordination. A recent proposal launched by the Advisory Council on Educational Planning, stressed continuity and co-ordination and proposed that unified district education authorities be set up, with the overall responsibility of administration in their districts (Directions for Education Development, 1974). The report argues that differing administrative systems for kindergartens, primary and secondary schools must affect planning at the district level and see district re-organisation as the real Achilles heel of the system that wants to effect more decentralisation.

However, the need or demand for continuity and co-ordination must have an inevitable centralising effect. When diverse units seek to react together through common policies, common decisions and common actions the autonomy of the units or members will deteriorate. It is not always the case that decentralisation produces uncoordination, but the diversity in a decentralised system can only be maintained if the levels of a system are entirely co-ordinated.

5) Conflict. Intervention by upper limits is necessary to resolve differences at lower levels and the willingness on the part of units to accept mediation by higher levels will lead to more centralised control. March and Simon in their book "Organisations(1938)" see conflict as a break-down in the decision-making chain, thus forcing higher levels to interfere. Conflict occurs when an individual or group experiences a decision problem. (March and Simon, 1938). Several examples are discussed in Chapter 1 of the conflict between provincialists and centralists; basically the conflicts exposed the relative strengths of each section and allowed the strongest section to show its authority. Certainly after the early 1900's, conflict favoured the department that proceeded to formulate centralising policies.

In considering changes in the locus of decision making, the movements may not be entirely in one direction. Decisions that were made in the District Board offices in the 1870's for instance, were transferred to the Department of Education in the 1930's,

only to be transferred back again to the Boards' discretion or even to the school committees in the 1970's. Therefore changes in the locus of decision making have been significant over the complete period of colonial development, and again this chapter reviews the complete process since the 1870's. It is recognised, however, that the modernisation of the education system has produced a system of increasing complexity wherein comparisons about the processes of decentralisation, to perhaps the 1890's, have to be made carefully.

Changes in the structure of administration and re-organisation of districts may not necessarily lead to changes in the locus of decision making but in many cases the change in structure will mean the addition or removal of an agency of some kind. Therefore, even though there appears to be a dichotomy between structural decentralisation and decision-making decentralisation, which is appropriate for analytical purposes, the two are interrelated. Therefore when analysing the locus of decision-making and shifts in the responsibility for decisions a structure must be specified.

It has been mentioned that agencies effecting modern educational administration are numerous and complex, but for the purposes of this study the four main structural levels of educational administration will be considered - the school committee, the district education board, the regional board of the department of education, and the department of education itself. The responsibility for making important decisions about education are distributed across these four structural levels. Today secondary



education uses the Regional Offices of the Department, whereas the primary school employs the Board of Education. Some of the decisions may be located at one level and others at another. As circumstances change, decisions move within the four hierarchical levels. Therefore when the decisions move up in the hierarchical level the system becomes more centralised and vice versa. It is considered centralisation, when the board assumes authority over decisions that were previously made at the school committee level, but it is also agreed, that a principal could develop either a centralised or decentralised approach to decision making with his own school. In creating levels of organisation for analytical purposes it should be recognised that there are intra-level variations in decentralisation as well as inter-level variations. Therefore when using the four agencies outlined above it is assumed that analysis is being conducted on a broad scale throughout the system of education administration.

In defining the four structural levels, three of which have existed since the formation of the provincial councils, an opportunity arises, wherein an evaluation can be made about the changing responsibility for decision-making between the four structural levels, and a system that has a centralised approach to administration, and a system that is more decentralised. If an assessment is made for each of a series of time periods, about the locus of decision making within a particular system via these structural levels, then temporal comparison can be made. When linking the time periods together, a centralisation-decentralisation continuum begins to emerge.

Fesler (1968) uses the term 'centralisation-decentralisation' continuum but points out that the extremes of the continuum are beyond the range of any real political system. However, he believes that it is possible to compare individual political, or administrative systems so long as a base point in the middle of the continuum is found in order to level or adjust the analyses. He accepts that such a placement would have a value connotation. He also points out the hazards of trying to gauge the process, for administrative decentralisation is a process that will be innately slower than centralisation, e.g. a central office that bears legal and political responsibilities, will hesitate before delegating powers to unknown organisations that might lack, in the central office's view, specialisation and the skills needed. As a result of this, 'protection of responsibility' could be 'pseudo-decentralisation' where there is a decentralisation of work load which is not the same as the decentralisation of power i.e. to move the work load out of a capital city, may even promote a feeling of the government being closer to the people despite little delegation of power. Again, this emphasis on the importance of considering the movement of the locus of decision-making, as well as the structural changes, i.e. a structural change, splitting up a large unit for instances, may not constitute true decentralisation. Therefore, the most appropriate model for an analysis of centralisation or decentralisation, is one that allows for variation in the locus of decision-making over time (i.e. one which allows for both, the upward and downward shifts, that are described as centralisation and decentralisation), while at the same time allowing for the change in administrative patterns and structure.

### The Centrality Index

The Centrality Index plots the changes in the locus of decision-making with particular reference to grouping the total effect over the line periods studied. The time periods selected were the same as those used in Chapter 2 apart from the inclusion of 1947, thus completing the representation of all the time periods in Massam's Framework for the Spatial Evolution of Administration Systems. (tiv, a and b, tv a and b, and tvi).

Although<sup>a</sup> list of addresses for schools is not available for 1947, the actual number and size of the schools provides the basis for an estimation.

Six areas for concern of education administration, were selected that are thought to represent the key process of administration over the five time periods:

- 1) Inspection.
- 2) Finance - for equipment within schools.
- 3) Finance - for the building and extension of schools.
- 4) Curriculum.
- 5) Appointment of teachers.
- 6) Certification of teachers.

These areas of administration are broad yet can be directly linked to the end product of education, presumably, the educating of the individual child. The training and appointment of teachers will secure the standard of instruction, and the control of the curriculum will dictate what is taught within the classroom. The

provision of buildings and equipment also creates a potential for realisation of quality in education.

The basic nature of the selected aspects of education administration, will also allow them to be linked effectively with the rudimentary education systems of the provincial councils before the 1877 Act, as well as to the complex organisation that administrates education today. Measures of output in education (Hirsch, 1959, Peston, 1969, Becker, 1969, Bowen, 1964) are varied and numerous, for example Peston (1969, 61-62) cites ten components of output ranging from 'the abilities of pupils with respect to early specifiable activities such as reading, writing etc.' to 'the external behaviour of pupils, for example their propensity to be law abiding, socially responsible etc.' For all indicators of output, administration of education will have a bearing upon them.

Taking the school committee, normally found within the school area as a starting point, the six 'areas of administrative concern' were assessed for each time period. The distance from each school to the point at which representation or a decision within the area of concern would be realised, was measured. For example in 1978 the decision concerning appointment of primary teachers was made at district boards office, whereas decisions concerning curriculum were made at the department. The straight line distance was measured for each school, to either the district board, the central department of education in Wellington or one of the three regional offices (Auckland, Wellington, Christchurch).

The school committee decisions were registered at zero but attained significance within the overall index for an education district. Two separate indices were calculated to allow the competition of a fixed centrality index, firstly the 'board index', which is the sum of the distances from the individual schools to the board (similar to the Moment of Inertia in Chapter 2, except that the square of the distance is not used to apply to the weighting of the more distant schools). A regional index was calculated within the total index for secondary schools in 1978, the regional authorities having been developed relatively recently and not a departmental index for the measurement of decisions made from the department of education.

Combination of the school committee (c), board (b), departmental (d), and regional indices (r) according to the state of the administration at the time will give an indication of the total distance over which decisions have to be made for the effective running of each school. As the locus of decision making has changed over the time periods selected, the total index (t) will monitor the changes. Therefore the combination of indices divided by the number of schools gives a total index for each educational district. (Table 5).

$$I(T) = \frac{\sum \{ I(B) + I(D) + I(R) \} \text{ (where applicable)}}{\text{no. of schools}}$$

TABLE 4: Changes in the Locus of Decision Making over Five Time Periods

B = board  
 C = school committee/board of governors  
 R = regional office  
 D = department of education

Inspection	Finance (Equipment)	Finance (Buildings)	Curriculum	Appointment of Teachers	Certification of Teachers
A - b HB - b T - b W - b N - b C - b O - b	A - c HB - b T - b W - c N - b C - b O - c	A - b HB - b T - b W - b N - b C - b O - c	A - c HB - c T - c W - c N - c C - c O - c	A - c HB - c T - c W - c N - c C - c/d O - c	A - b HB - b T - b W - b N - b C - b O - b
1870 7 boards					
B	B	B	D	C	B
1890 13 boards					
D	C	D	D	D	B
1914 9 boards					
Primary D	D	D	D	D	D
10 boards					
Post Primary B	C	D	D	C	D
1947					

TABLE 4: continued

Primary B 9 boards	B	D	D	B	D
Post Primary R 1978 3 regions	R	R	D	C	D

Abbreviation: A - Auckland, HB - Hawkes Bay, T - Taranaki, W - Wellington, N - Nelson,  
C - Canterbury, O - Otago.

As with the analysis of spatial efficiency, measuring a distance with a straight line to represent changes in the administrative structure has its disadvantages. Firstly, a straight line distance is employed rather than road distance or travel time, secondly, the measurement of distance assumes that the relationship involved is one of personal contact and personal visit, either from the representative of the school to the board, department or regional office or vice versa. Although a personal visit is seen as important in the relationship between schools and the administrative centres, a good deal of business within the area of concern is conducted via the telephone and the postal system. With inspection and financial matters a visit to the school concerned is needed. However, with the other areas of administration the school might never be directly involved, only indirectly via departmental policy measures.

Nevertheless the distance from the school to the administrative centre responsible for the various areas of concern does relate to the degree to which control is administered. If a school has not direct contact concerning curriculum measures for instance, or the decisions within the area are made in the Department of Education, then a large physical distance will relate to the abstract distance between the school and department on matters concerning the curriculum. Therefore the more decentralised administration becomes, the more chance there is of schools being able to make their own decisions rather than having to adhere to policies made in the department of education. As with the spatial efficiency measures, no weighting is given to school sizes, therefore each



school is considered equally, each having to be administered in the same way.

Table 4 shows the state of the administration at each time period, indicating from what level each area of administrative concern is controlled. The 1870 time period shows the situation for each of the boards of education, as there were variations between the education policies of the provincial governments. For 1947 and 1978, a distinction is made between primary and post-primary schools as their administration was different. The secondary inspectorate and many other administrative decisions for example, are organised from the Regional Offices. In some cases, deciding what administrative level has control, is difficult, as approval for a building project for a primary school classroom block has to be given at the Regional Office, as well as from the Head Office, despite the fact that the board designs and administers the building project. However, the highest level to which proposals are checked and approved in a lot of cases approval is granted as a matter of course at the highest level.

Table 4 immediately indicates the effect of the movement to reduce local control in education. The primary school administration in 1947 for example seems to be entirely controlled from the department of education, so much so that it appears that the boards have been completely divested of any authority. Although the development is outlined in Chapter 1, A.E. Campbell (1954, 41) writing in the early 1950's highlights this point.

TABLE 5: Indices of Centrality

a) State Primary and other schools controlled by Education Boards

	1870	1890	1914	1947 <sup>(i)</sup>	1978
Auckland	49.3	1621.9	1805.9	1379.9	1422.3
Wanganui		607.7	677.4	956.8	614.5
Taranaki	34.0	778.2	829.0	998.5	760.1
Hawkes Bay	39.6	789.5	1053.1	1387.3	879.1
South Auckland					1185.6
Wellington	74.1	232.1	516.1	251.7	250.0
Nelson	32.1	573.0	522.9	1373.7	1015.5
Marlborough		259.4	947.4		
Grey		988.0	983.4		
Westland		1290.0	1340.8		
Canterbury	63.1	1284.4	1196.4	3223.8	1838.8
South Canterbury		960.0	1739.6		
Otago	45.0	1802.5	2286.9	4249.6	2432.8
Southland		2348.0	2714.9	4400.0	2393.9
Mean Average	48.0	1040.9	1107.8	2093.4	1278.8

Table 5 continued .....

TABLE 5: continued

b) State Secondary Schools and Schools with Secondary Classes 1978

Northern Region	1088
Central Region	710
Southern Region	2266

Notes:-

(i) Estimated from 1978 figures (% difference in the number of schools)

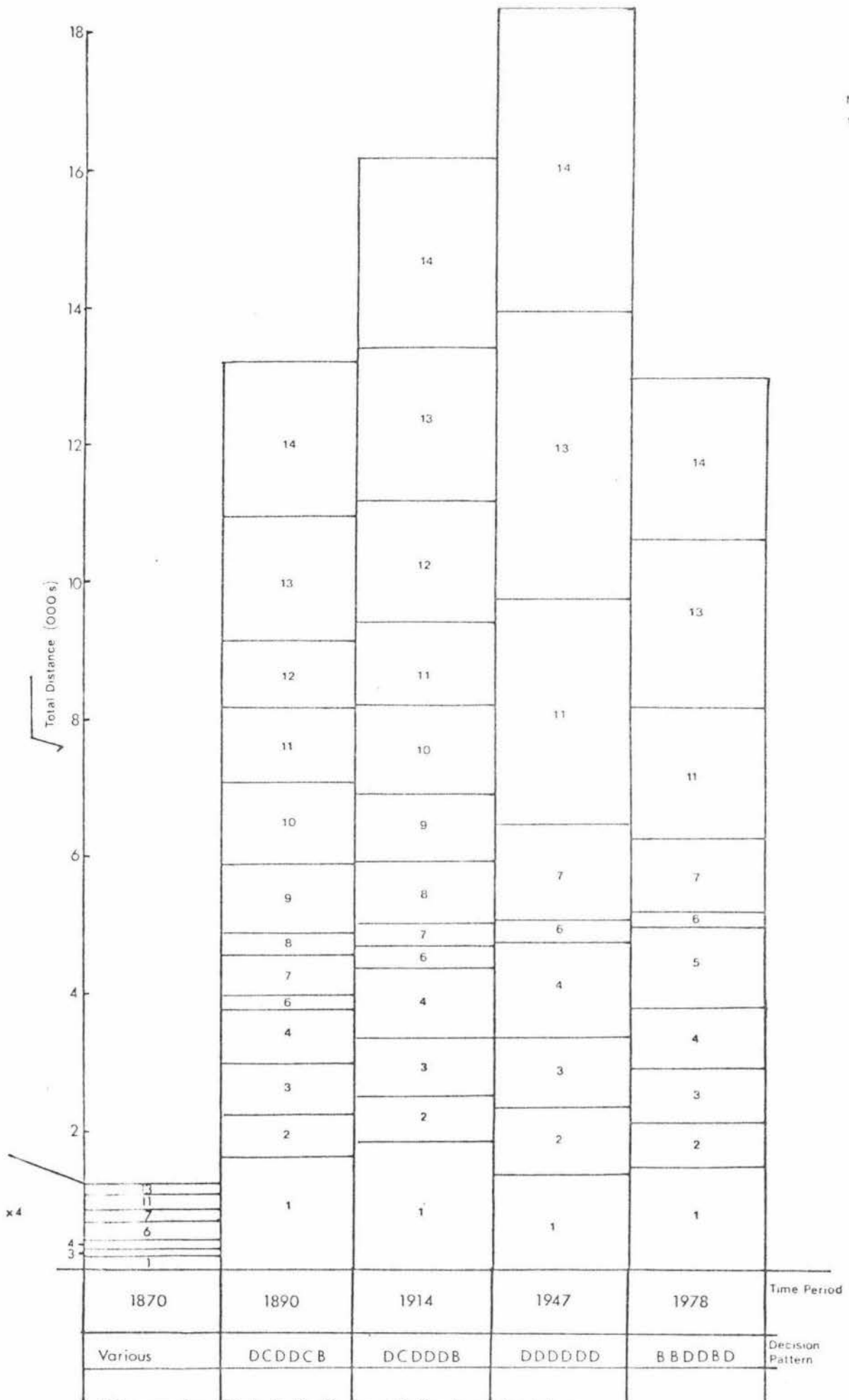
(ii) All Square Root Values.

Unless a vigorous effort towards decentralisation is made, it seems certain that the local district boards would become more and more merely agents and intermediaries of the department until from the point of view of their original function, they were merely vestigial structures.

The 1970 situation represents the most decentralised time period as the board had little to do with a central department apart from some secular schools receiving grants from state finances. The dichotomy of control between the church and the state was important in the 1860's, but apart from Canterbury, by 1872, a provincial council for education controlled all educational matters. The 1870 and 1913 time periods represent the gradual centralisation of the administration of the late 1950's. Although by 1947 the anti-board feeling had subsided and more minor administrative work was devolved to the boards, the decision-making loci still remained with the department. Today many of the decisions concerning education have been decentralised, (Inspection, Finance (equipment) and Appointments) and following the development of a regional structure in 1948, the post-primary administration and inspectorate were regionalised. Thus the secondary system had shown distinct signs of structural decentralisation over the past thirty years.

### Analysis

The mean average of the total indices is enough to show this trend. Although it is difficult to say that the system in 1947 (TI - 2091.3) was twice as centralised as the system in 1890 (TI - 1040.9) and almost double 1914 (1107.8) it would appear that there were significant changes in the locus of decision-making. Figure 6 displays this, even when the square root values



are employed in order to allow the readings for 1870 to show up. However the actual effect of centralisation could be highlighted by the conclusion of Chapter 2, that points to increased levels of efficiency within smaller education districts. So increasing centralisation has been accompanied by larger districts and less spatial efficiency. Effectiveness in administration however has many facets; spatial efficiency in itself, when considered longitudinally, should include some adjustment to changes in transport technology. The total index measuring centrality therefore treats distance from a school to its administrative centre as the same in 1890 as in 1978. The index therefore merely measures the changes in the loci of decision making, but does not allow for the increased potential for more efficient contact between administrative units.

This concept is an important corollary to the Centralisation Index, however it does not detract from the usefulness of the original index, that will still allow comparisons about the state of each system to be made through time. Improving transport technology will, in effect, lower the indices and present in comparison, a more decentralised system.

Improving transport technology will allow more effective administration as a personal visit to a rural school in 1870 would take considerably more time than in 1978. Therefore adjustments are made to indices via the universal introduction of a viable train system (1875), road system (1922) and air mail system (1944) (Grant Anderson, 1977). Forer (1977, 104) admits

to the difficulties of adjusting analytical techniques to the evolution of transport technology and employs the concept of time-space to explain the evolution of accessibility:

With personal (face to face) contacts things have also evolved. The travel hierarchy of available speeds and times now have several levels from walking through to flight, there is an inverse relationship between general availability of a system level and the speed benefits available within it, a tension between equity and access.

Forer's study of Christchurch argues that in view of time-space considerations the developments of the city and its suburbs can be regarded in a different light. When considering the time periods 1880, 1916 and 1970, the mileage figures for the maximum diameter of the city for instance, have varied. For example, with 1880 as 100, the mileage figures read 100:146:263, from the three time periods but by comparison the time to traverse the distance by the fastest mode generally available has changed the mileage to 100:55:50. Therefore a broad conclusion can be drawn that transport effectiveness within the Christchurch area has improved by 50%. For inter-regional movement, the effectiveness would have increased considerably more as the distances increase and the potential for congestion through increasing usage and amount of transport modes would be less.

As Forer's time periods relate closely to the time periods employed in this study, to disregard them would be shortsighted. In view of Figure 7, the change in transport technology is significant between 1940 and 1960, thus highlighting the time period 1947 (tvb) (Communication systems improve with transport innovation), it compared with previous time periods. Figure 7 shows the adoption of three systems for inter-regional contact

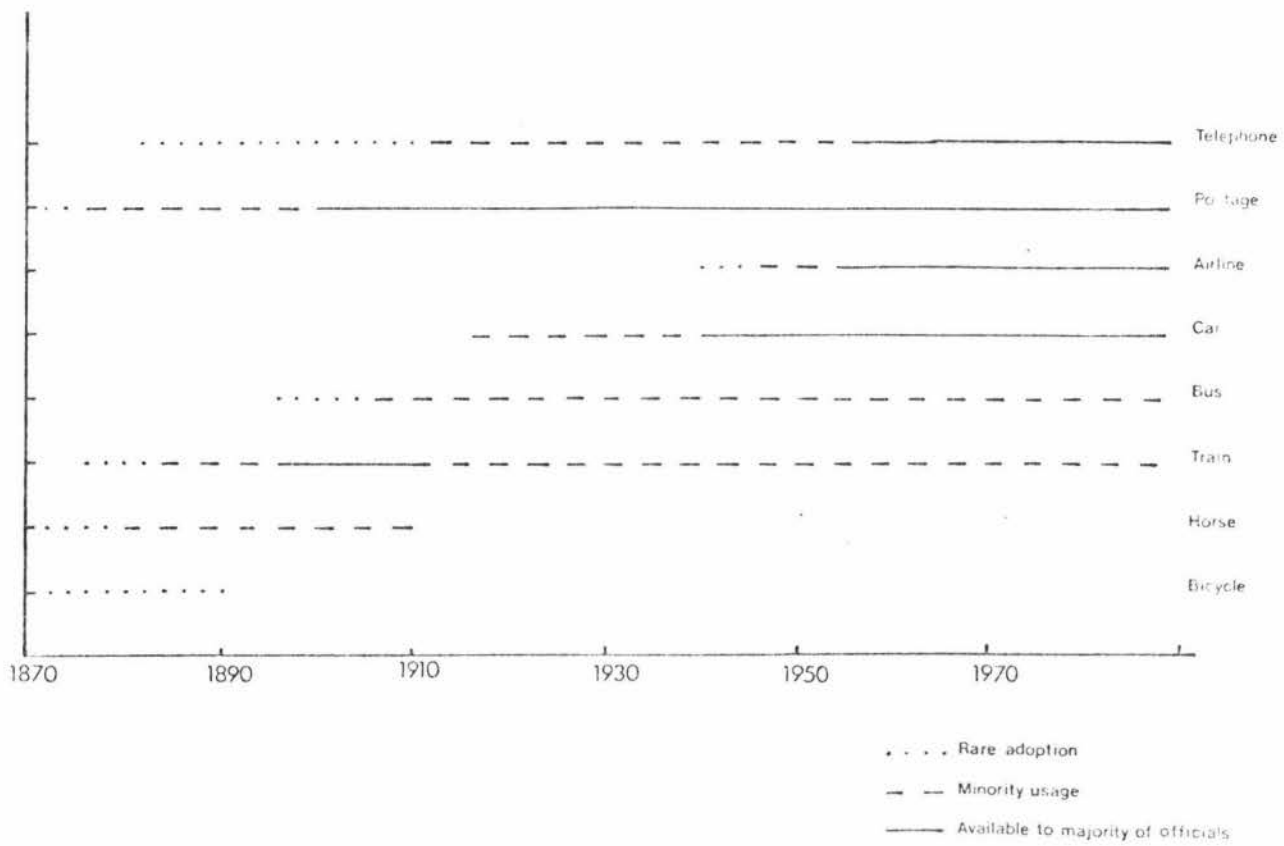


Figure 7: Mode Availability for inter-regional contact 1870-1978  
(intra-regional 1870-1890).

Source - Forer 1978.



(telephone, car, airline) between 1940 and 1960, and combines with the postal services to constitute the four major types of inter-regional contact. The development of an efficient national contact system undoubtedly made centralisation for the provincialists at the time, far easier to bear, as Wellington and its numerous central departments came within a closer range. Yet, as future comment will enlarge, the disadvantages of centralisation cannot be overcome entirely by increasing the speed at which one can get in contact with the central department. However if Forer (1977) sees that transport between 1880 and 1970 has improved by 50%, then the index for the four time periods can be seen in a different light; (it seems logical to assume that transport effectiveness has not improved since 1947 as any increase in efficiency would be cancelled out by increased congestion, reduction of rural services for buses and trains, and the restriction of fuel sales). The Forer study commences investigation in 1880, and considering the lack of transport technology development from 1870-1880, it was considered viable to allow the 'T' Index to start in 1870 and adjust in 1890 by 10%, taking notice of the beginnings of a train system and the increasing adoption of the horse. (Figure 7)

	1870	1890	1914	1947	1978
Total index	48	1040	1107	2091	1278 (average mean)
% reduction	0	10	45	50	50
Adjusted index	48	936	609	1046	639

Table 6: Time-Space Adjustments for Total Centrality Index

The 1947 index still shows an increased level of centralisation, yet with equality of time-space the modern system of administration (1978) shows a similarity to the 1914 system. The 1890 system appears to be affected by the adjustments the most, despite the same spatial structure and the increasing effect of the growing central department in the early nineteenth hundreds. The 1890 system, because of the limited transport available, becomes the second most centralised system. The provincial council's index of the 1870's reflect the relatively small numbers of schools and their proximity to the early settlements, nevertheless because of the early importance of the school committees and the non-existence of a decision-making central department, the 1870 index must be regarded as the most decentralised. (Table 6)

This concept does not provide appropriate analysis to demonstrate the changes in the locus of decision making over time, that is, a model that shows both the upward and downward shifts we describe as centralisation and decentralisation. However, in order to reinforce the possible inadequacies of postulating this type of model, it can be pointed out, that firstly decentralisation is a complex administrative and social process which cannot accurately be associated with a single figure. Secondly that determining placement for decision-making within four broad levels of administration has its difficulties. For example, within the field of finance decisions are made at a variety of levels concerning grants depending on the actual amount of money involved. Thirdly the trend toward centralisation and decentral-

isation will probably vary over decision areas. Therefore at any point in time, decisions in certain areas may be centralised or decentralised more rapidly than decisions in other areas (Miklos, 1977, 5). Lastly, sometimes decisions within the same level, are made with different goals and objectives in mind; therefore as a system is developing decentralisation as a formal goal, some decisions might be developing centralisation at the same time. Abler et.al.,(1971, 554-555) realised that spatial connotation of the process of centralisation and linked the developing transport technology with increasing centralisation of control. In the United States for example, it seems that federal government policy is having far more impact on daily life than it had in the past.

As space shrinks, control agglomerates. In the same way that time-space convergence tends to eliminate lower and middle level central places, time and cost-space convergence saps the power and importance of lower and middle level governments.

At the level of analysis within this study, this progression has not occurred, as despite the adjustments for the development of transport technology, a trend exists towards a centralised education system (1870-1980-1914-1947) despite that, during the last twenty five years, the trend has been away from centralisation. Obviously the comparison between a nation's organisation and the organisation of education, are on different levels, but it is still relevant, that a trend has occurred away from the uniform control that centralised systems create. It also does not seem unreasonable to suppose that the forces that encouraged the New Zealand System of Education Administration to decentralise, are apparent to a national level now, and a similar response could occur in the future on a larger scale.

## CHAPTER IV

## THE OPTIMUM SIZE OF EDUCATION DISTRICTS

In Chapter 2 we concentrated upon the spatial form of administrative units and we noted that the indices of efficiency and shape were independent of the size of the areas under examination. Clearly there are within the New Zealand education administration **systems great variations** in the size of education boards. In this chapter some consideration is given to this variation through the analysis of economies of scale and organisation size. The variables of size examined are the varying numbers of children and schools and the differentials between grants issued to education boards. It is hoped that a combination of studies will begin to develop an overall view of the system and that the findings of this chapter can be made to interplay with other aspects of other study. Not all the available techniques for the assessment of location and space of administrative systems can be used, but through the investigation of the economies of scale and organisational size, other techniques are introduced.

The problems of dealing with models that are merely part of a larger arena are of great concern to social scientists, but basically it seems erroneous to draw conclusions from partial analysis if the conclusions are not related to the complete system.

We need to have a clear understanding of the individual relationships between components before we can assemble these components into a large model. (Massam, 1975, 29).

In education administration in New Zealand a limited amount of 'analytical research' is available on administrative efficiency. The reluctance to take notice, and include technical advice in education policy measures, is highlighted by W.L. Renwick (1978, 2), who admits, when discussing the formulation of policy proposals that

education policy making, in my experience of it, is seldom determined by technical advice alone - policy making in education is more a matter of forming queues than of making choices on the basis of cost-benefit studies.

Studies on the topic of spatial effectiveness within education hinge around discussions on the size and number of the board districts. The most extensive report, carried out in 1964 by Boulton,<sup>was</sup> entitled 'Report of the Commissioner on Education District Boundaries'. He submitted several proposals for changing boundaries and administration centres, based on the balancing of the numbers on the school roll, consideration of the problems of administration of rural schools, the rural area involved, and the mounting numbers of children being educated in the urban areas. The study submitted that within the limitations of the simple comparative techniques it was impossible to present objectively obtained conclusions. For example, a comparison of administrative costs led to <sup>an</sup> 'a priori' assumption that 'it was difficult to arrive at an entirely satisfactory basis on which to compare the administrative costs of large, medium and small boards'. The outcome was the recommendation that three new boards should be created and that the responsibility for the Marlborough schools should be transferred to the Nelson authority. Little notice was taken of the recommendations and the boundary commission ceased

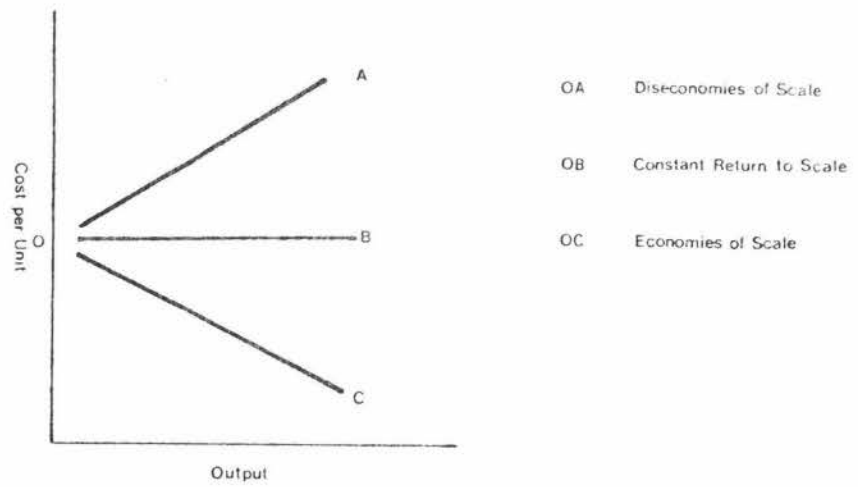
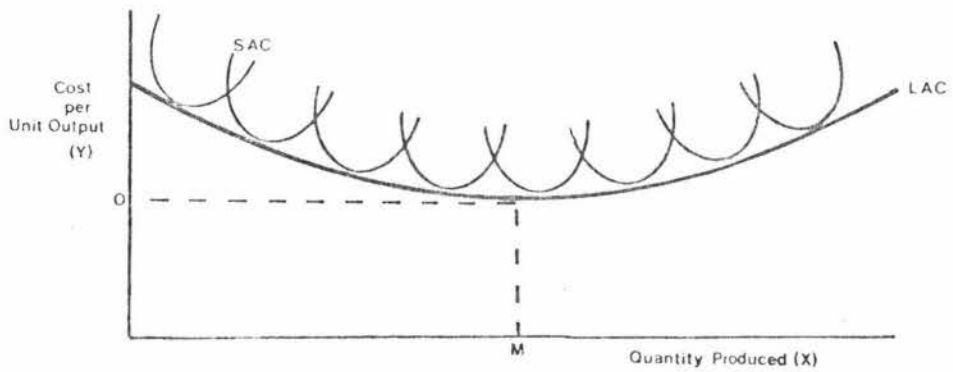


Figure 8: Relationships between output and cost-per-unit.  
Source: Massam, 1975



Adapted from Massam, 1972

Figure 9: Average Cost Curves

to exist.

The Currie Commission (1962) and the Nordmeyer Report (1974) both discuss the 'Number and Size of Education Board Districts' and admit that even though there is considerable scope for variations in size and population of education board districts, extreme variations should be examined. Nordmeyer states (1974, 42-43)

above a certain size, a board member's ward (district within the board area) will cover too many schools and too extensive a district for effective representation. Below a certain size, the board will be unable, economically, to employ a large staff and be diverse enough to provide the full range of services needed to support the work of the schools.

This chapter hopes to review effectively these problems that Nordmeyer outlines, firstly to indicate the optimum size for a board i.e. taking economic efficiency into account, and secondly to investigate the relationship between personnel and work load, hoping to determine optimum size work load and thus reflect on the optimum size of administrative areas.

### Economies of Scale

Most recent studies of economies of scale have attempted to define an average cost curve for a particular activity:

The average cost curve relates the size of the organisation to the production cost per unit output. As the size of the organisation and the level of output increases there are three possibilities for the systemic bend of the cost per unit curve. (Massam, 1972, 19). (Figure 8).

The three curves can be combined in different ways. An amalgamation of a series of dependent variables can give a long run average

cost curve (LAC) which can be described as the envelope curve in the series of short run curves (SAC). (Figure 9).

The shape of the LAC is dictated by:-

1) As the quality of output increases, the economies of scale begin to take effect and show themselves as a saving in cost per unit output.

2) When point M is attained, the optimum point of production is reached, and the cost per unit will be 0.

3) After (M) diseconomies of scale result and cost per unit output increases.

Theoretically it is possible to deduce, with respect to public and private services, that when the LAC is U shaped, it represents the best size for the area supplying the service. These studies effectively consider the area or size at which a service can be operated at the least expense. This is an important, but not the only factor, in determining how district boards should be split up, or combined, to take advantage of scale economies. Reports recommending changes in size etc. have not taken empirical studies of cost effectiveness and scale economies into account. Practically, the formation of cost curves is fraught with conceptual difficulties so that few studies have provided a clear picture. Hirsch's studies (1959, 1965, 1968) are central to this analysis. However, Table 7 shows the Cost Curve Studies of Scale economies within the public sector. School administration for example, (Hirsch 1959, 240) is based on 27 St Louis public school districts, varying in size from 300 to 84,000 pupils and showed a U shaped cost function with its trough



TABLE 7: Cost Curve Studies of Scale Economies

Name and Year	Service	Data	Result
Lomax 1951	Gas	S	AUC declining
Isard-Coughlin 1957	Sewage plants	S	AUC declining
Hirsch 1959	Primary & secondary education	S	AUC approx. horizontal
Hirsch 1959	Fire protection	S	AUC is U-shaped with trough at about 110,000 population
Hirsch 1959	School administration	S	AUC is U-shaped with trough at about 44,000 pupils
Hirsch 1960	Police protection	S & Q	AUC is approx. horizontal
Schmandt-Stevens 1960	Police protection	S & Q	AUC is approx. horizontal
Johnston 1960	Electricity	S	AUC is declining
Nerlove 1961	Electricity	S	AUC is declining
Hirsch 1965	Refuse collection	S	AUC is approx. horizontal
Will 1965	Fire protection	E	AUC is declining-major economies reached at about 300,000 population
Kiesling 1966	Primary & secondary education	S	AUC is approx. horizontal
Riew 1966	Secondary education	S	AUC is U-shaped with trough at about 1,700 pupils
Dawson 1969	Secondary education	S	AUC approx. horizontal

... continued.

TABLE 7:  
continued

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Maud Commission 1966-1969	Local government	S	AUC inverted U-shape max. value about 60,000 population
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Abbreviations: S - Statistical data; Q - Questionnaire data; E - Engineering data;  
AUC - Average unit cost (average cost curve)

Adapted from Hirsch 1968.

at an average daily attendance of about 44,000 pupils.  
(Figure 10).

Hirsch distinguishes between vertically, horizontally and circularly integrated services. A horizontally integrated government service controls a number of units all developing a single service. A circular or complementary integration refers to an administration that operates a number of services that complement one another. Hirsch includes the school board in this category. Growth however, normally takes the form of horizontal not circular growth i.e. horizontally integrated service plants are developed as communication grows to service extra population. The administration of education during growth stays in one building that organises expanding circular integrated school plants. A vertical integration refers to operations that are organised on successive levels.

School administration has been examined for economies of scale by Hirsch (1959) alone. Other studies refer to the education system as a whole, Kiesling (1966) and Dawson (1972) identify horizontal cost curves, Dawson recommending 6,000 to 7,000 as an ideal school district. Hanson (1966) and Riew (1966) find U shaped curves, Hanson arguing for 50,000 as the optimum size of district, whereas Riew suggests approximately 1,700 pupils, enough for a population of 6,000 people. All studies reflect different scales of school administration and are based on a variety of countries, therefore comparisons between them present difficulty. Education or administration is considered a difficult activity to

measure, Alesh and Dougherty (1971, 14-16), for example, list 'government activities and public services' into three groups of increasing difficulty for the adoption to economies of scale analysis. Administration and education are seen as highly complex processes where economies of scale analysis is complex and difficult. Hirsch (1971, 479) also mentions that all circular integrated systems present problems in finding suitable measures of output;

few services have a basic output unit with reasonably well defined physical characteristics. The best example is water, where the basic output unit is a cubic foot, or acre-foot, of water delivered to the place of use.

Alesh and Dougherty would consider Water supply, Sewerage Treatment, Refuse Collection and the provision of street and highways in Group I where output is easily defined and their operation revolves around a routine service.

Output variables must also take into account quality measures. Quality variables exist for even the most basic service. For example, for a cubic foot of water, quality considerations can be given to its delivery i.e. effective supply systems, and its physical characteristics, i.e. whether it is of the correct chemical control. The factors affecting quality in an education system are considered by Hirsch (1969, 237) as a composite of six subindices.

Teacher/pupil ratio, per cent of high school seniors entering college, number of college hours of the average teacher, average teacher salary, per cent of teachers with more than 100 years of teaching experience, and number of high school credit units.

Although these variables relate to school administration and are incorporated into Hirsch's study of school administration, they cannot be considered in the context of New Zealand Education boards, as board administration has little direct contact with the classroom scene, because the day to day organisation of the school is administered by the school committee. Quality considerations for this study are assured to equal across all education districts.

Cost per pupil is considered as the unit of output, but, as Boulton (Report on Boundaries, 1964) points out, the roll number does not take into account all aspects of administration, such as efficiency of investment schedules. Administrative aims must be ultimately concerned with their effect on the individual pupil. Input values assessed are:-

- 1) Total Grant to Education Board (Figure 10).
- 2) Administration Expenses (includes salaries for Architects and Draughtsmen and administrative personnel). (Figure 11).
- 3) Maintenance Grant (worked out as part of the total grant, and issues per square metre of classroom etc). (Figure 12).
- 4) Transportation Expenditure (independent of total grant). (Figure 13).

All of these inputs relate to the administration process of budgeting grants that have resulted from assessments of the boards and district needs. Finance is a central theme in administration and its use or misuse can have many consequences:

the subject matter of educational finance is not restricted to dollars and complicated formulas, but also involves concepts of economics, taxation politics and education. After the money has been found, it must be allocated to realise the programme desired and achieve equality of educational opportunity. In addition to these very complicated tasks, students of educational finance must conduct research on variations in fiscal capacity and effort, educational research needs and costs, relationships between financing patterns and educational quality and numerous other aspects of the economics and finance of education. (Kinsbrough and Nunnery, 1976, 172).

Despite the outlay of money being of prime importance within the administration system, and that it is readily measured through the relationship to cost per pupil, there remain variables that do not partly lend themselves to quantification. Administrative skill is an example that is relevant here and again we have to assume that this quality measure is distributed equally throughout the education boards.

In using data of a cross-sectional nature which confines itself to one-year (1978), no assessment can be made therefore about the expenditure effort on growth, nor can forecasts or trends be made. Difficulties arise when comparing different years as the structure of financial records change, and comparison of differing areas of expenditure become difficult. Another difficulty with time-series data, is that complicated adjustments must be made to allow for the price differences within various time periods. Hirsch (1964, 237) discovers the same problem:-

growth and consolidation take place over time. Their effect on expenditure should perhaps be studied by using time series and not cross-sectional data. However, in addition to statistical problems, which make inferences from time-series data much less

reliable than those from cross-sectional data, it appears virtually impossible to obtain reliable data of the different factors for a sufficiently long period.

Hatry (1972, 76-78) is also concerned with relating the amount of inputs of a service or product, to the amount of outputs, thus creating a productivity index. The difficulty with a suitable quality output is noted, but considered as an essential ingredient in measuring productivity. Productivity measures link 'workload measures', quality factors and local conditions factors that should be considered in interpreting productivity. A productivity index is produced for a variety of public services. Inter-city comparison of productivity shows significant differences. Whether or not the differences are due to inherent local characteristics, or due to better practices by some of the jurisdictions is not known.

### Analysis

Separate graphs were constructed for each variable e.g. Total Grant (Figure 11), Administration Expenses (Figure 12), Maintenance (Figure 13) and Transportation (Figure 14), and plotted with a variety of scales. (As maintenance and administrative expenses were granted as part of the total grant, no aggregate curve seemed necessary). The scattergrams produced, varied in the relationships they portrayed. Figure 10 & 12 showed a trend towards economies of scale but lack consistency and Figure 11 showed a cost curve. Figure 13 showed no relationship. As the graph did not depict strong relationships between the two variables, interpretation is more useful at the level of comparing individual position of the boards within a number of variables. Therefore, each graph is

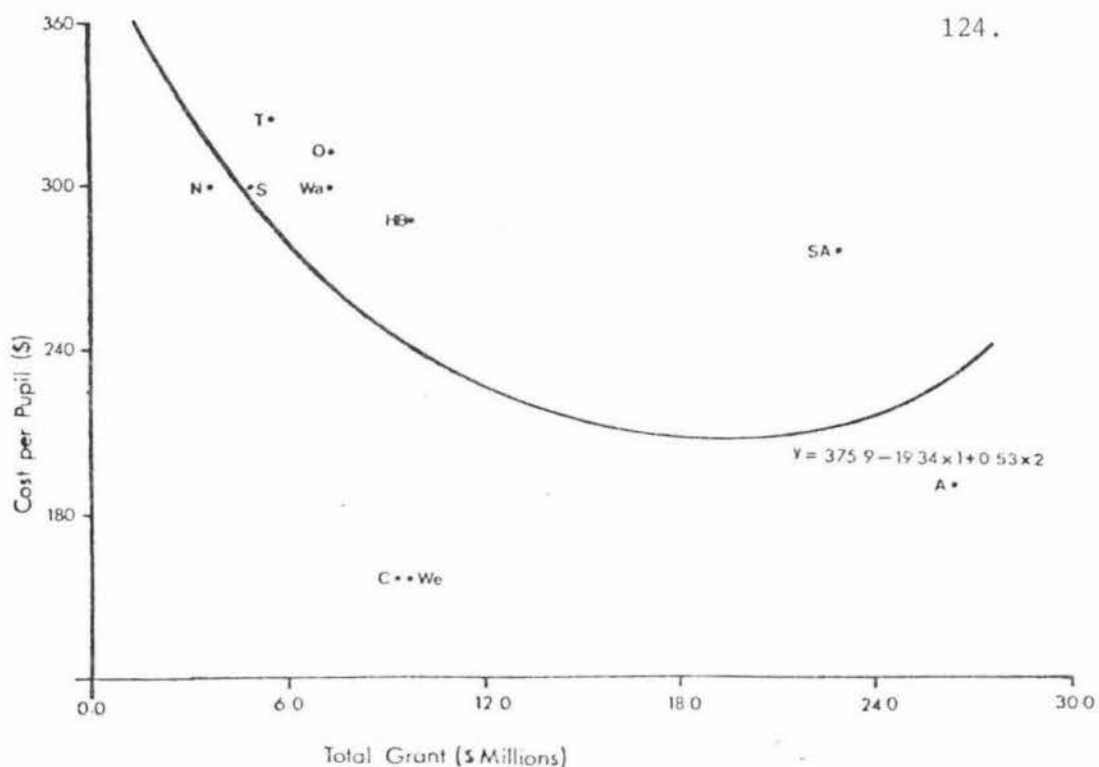


Figure 10: Cost Curve: Total Grant per Education Board

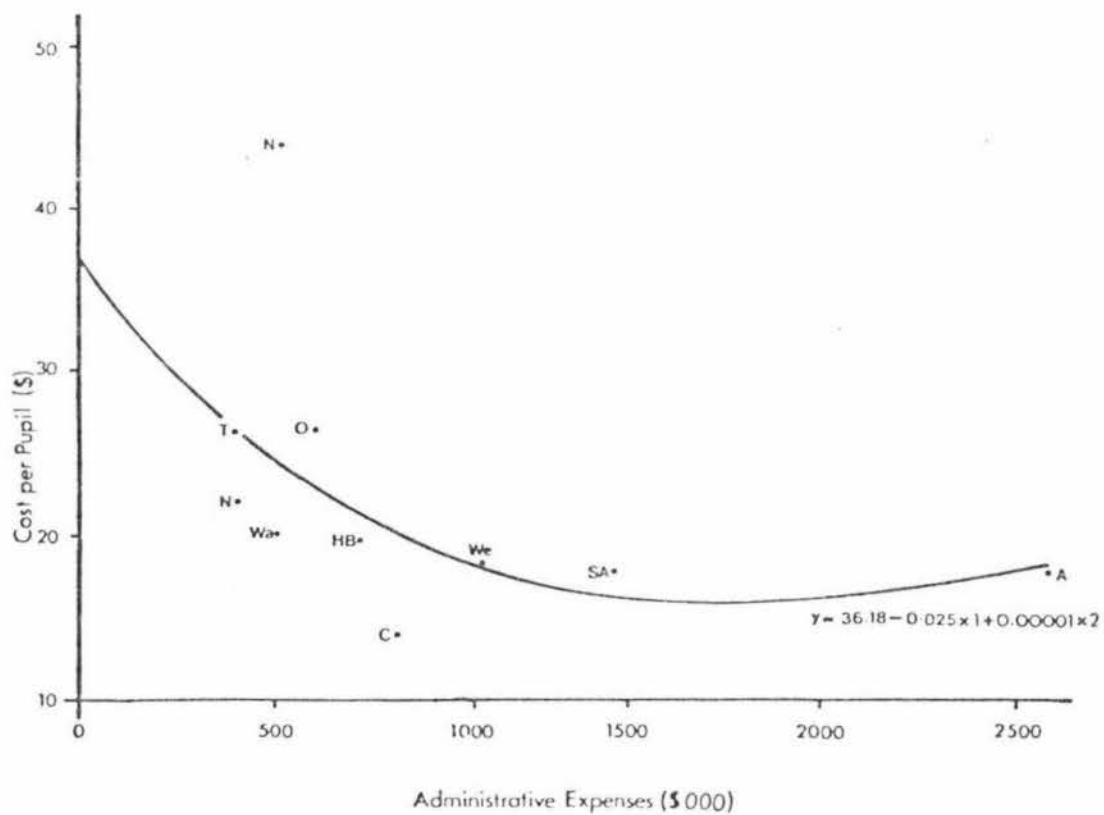


Figure 11: Cost Curve: Administrative Expenses per Education Board



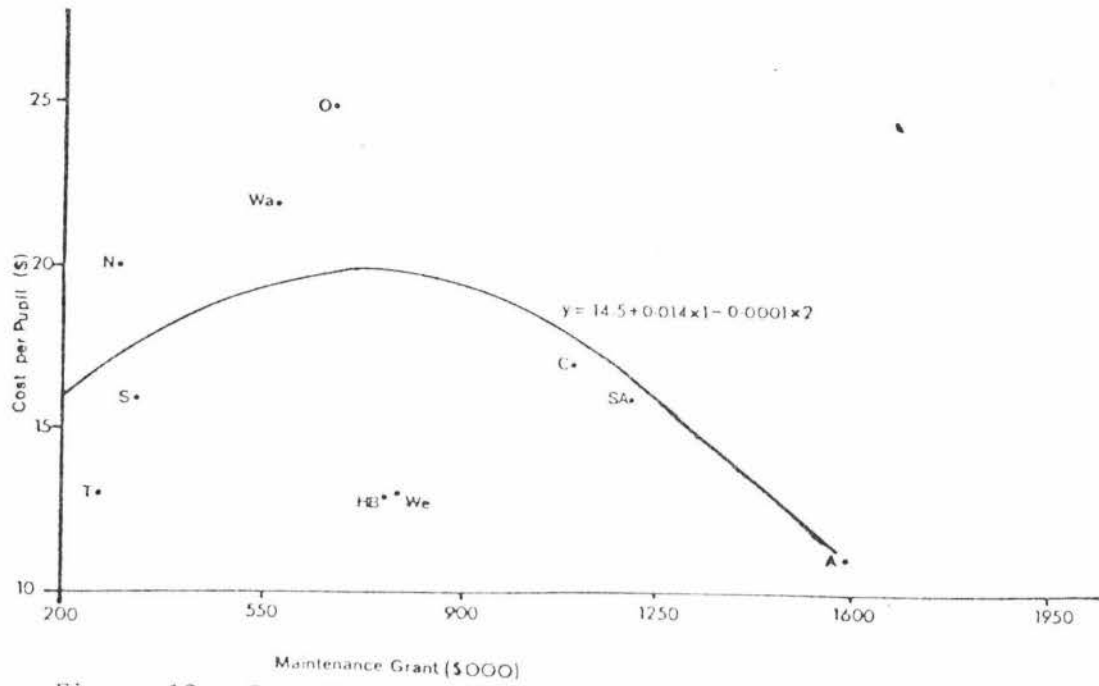


Figure 12: Cost Curve: Maintenance Grant per Education Board

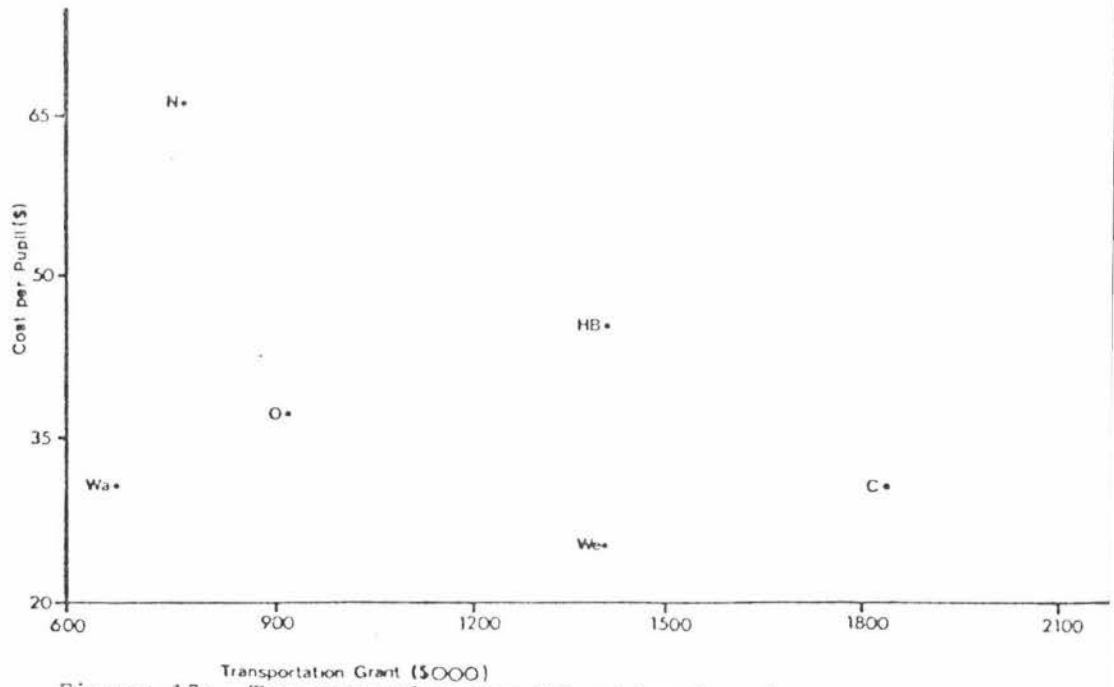


Figure 13: Transportation per Education Board

interpreted separately and general conclusions made about their collective importance afterwards.

Total Grant (Figure 10)

General economies of scale exist. A negative relationship shows a correlation of ( $r = .82$ ); however South Auckland (SA), Wellington (W), and Canterbury (C) do not fall within a general negative relationship (that cost per pupil declines evenly with an increase of total grant). Variations in total grant from year to year to exist and this fact alone may explain the relatively low grant for Wellington and Canterbury and the relatively high grant for South Auckland. In particular, the building allowances may vary according to the demand for new schools or extension to schools within any board district. Perhaps an average total grant calculated over three or four years might give a better indication of the relationship between total grant and cost per pupil.

Nevertheless a division exists between the larger boards (A, SA, W and C) and the smaller sized ones (Southland (S), Taranaki (T), Otago (O), Wanganui (w) and Hawkes Bay (HB)). Wellington and Canterbury on the Y axis (cost per pupil) and South Auckland on the X axis (total grant). The smaller sized boards seem clustered together indicating a response to equality of educational provision; the larger boards however do not adhere to this education idea. Size therefore, gives a potential for a variation in total grant. The position of Wellington and Canterbury is difficult to explain, especially as the social problems of urbanisation and growth will place special demands

upon metropolitan education boards. Another reason may be that the financial policy of the department may be to expand the Regional Offices within the metropolitan centres (W.C. and A.) at the expense of the Local Board. This seems difficult to imagine as the Regional Offices' functions are basically independent of those of the board. Another reason for Wellington's and Canterbury's relatively low grant, is that the building programme for these districts could have been restricted by difficulties in securing suitable contractors, and general difficulties in the building industry in these centres. If this is the case, building allowances would be transferred to other boards that could spend the money more efficiently (Nordmeyer Report, 1976, 131).

#### Administrative Expenses (Figure 12)

A U shaped cost curve is calculated for Administrative Expenses. The equation of the line is of the general form  $Y = a - b/x + b^2/x^2$ . A cluster exists over the middle part of the curve (T, O, S, Wa, HB) again a small rift exists between the 'cluster' and Canterbury, Wellington and South Auckland even though the metropolitan districts follow the 'U shaped' cost-curve pattern. Auckland and Nelson stand out separately, Nelson having relatively high administrative costs per pupil and Auckland represents a movement towards diseconomies of scale. The conclusion here is that the trough of the curve lies between the board size of South Auckland and Wellington and Auckland. Thus, administratively, Wellington, Canterbury and South Auckland are boards that are running efficiently or are within the optimum size range. Auckland is too large and the smaller boards (T, O, S, Wa, HB), especially Nelson, could be expanded to take

advantage of economies of scale.

#### Maintenance (Figure 12)

Like administrative expenses the maintenance grant is part of the total grant. The maintenance grant is basically dependent on the number of square meters of school buildings, plus the amount of property housed therein. A negative correlation exists ( $r = -.852$ ) between the two variables, therefore it is safe to assume that there is a trend towards economies of scale. Auckland appears at the extreme of the scale and represents an optimum scale; again there is a significant rift between the two groups of boards although there is more variation within the 'small' group on the y axis (cost per pupil).

Figure 14, which monitors the average size of schools shows how the larger the board size, the larger the average size of school, therefore it seems to be relatively more expensive to operate smaller schools than larger schools. Economies of scale again exist within the financing of individual schools. Therefore the board that operates a larger type of school can be assured of developing scales of economy.

#### Transport (Figure 13)

Not all the figures for transportation expenses were available therefore a complete picture cannot be drawn of the relationship between cost per pupil and transport expenditure. Using information supplied by the six boards whose reports outlined this expenditure, a poor relationship exists. Differing demands for transportation of pupils exists among boards,

therefore the expenditure on transport is more likely to reflect the rural nature and dispersion of pupils rather than size. Nevertheless, Nelson appears to have the highest cost per pupil in this respect, as next to Taranaki (23%), Nelson transports the highest percentage of its pupils to school (22%). Hawkes Bay and Otago also have relatively high cost per pupil; Otago only transports 14% of its pupils while Hawkes Bay transports 19%. (Wellington has the lowest cost per pupil reading and transports the lowest percentage of any of the boards (9%)).

All the graphs show a varied response to the relationship between cost per pupil and quantity of financial outlay. Economies of scale exist for total grant, administration expenses and maintenance. Evidence of clustering exists on Figure 10 and Figure 11, indicating an equality of provision. Clustering in Figure 10 is restricted to the six smallest boards, South Auckland, Auckland, Wellington and Canterbury, featuring separately. These largest boards split themselves away from the smaller boards in Figures 10 and 12. Auckland is the largest board, tending to remain separate from the other three larger boards, being over twice the size of Wellington or Canterbury. Only in Figure 11, does Auckland show signs of diseconomy of scale although in Figure 10, the total grant per pupil for Wellington and Canterbury was less than for Auckland, and this may well be the result of inconsistent building grants.

Maintenance and Administration Expenses appear to be more related to size than is the total grant. Administration expenses,

especially, reflect the size and efficiency of the boards themselves and are not in any way susceptible to yearly changes and therefore provide the dearest relationship between cost per pupil and size of the board.

At the other end of the scale, Nelson having only half the number of schools when compared to the second smallest board (Taranaki), appears well away from the clustering in Figure 11 with a high cost per pupil. Figure 13 also sees the cost of transport relatively high for the board. In Figure 10 Nelson's position is more within the expected range; it is one board whose small size is highlighted by the graphs and shows a distinct disadvantage economically when compared to the others.

Figure 14 shows that the larger boards support bigger schools ( $r = .88$ ). Auckland and Wellington in particular have schools of a significant size. This evidence agrees with McDonald (1969, 217-218), who through an unsubstantiated section on Education concludes the cost of providing pupil places varies inversely with the size of the school. However McDonald does admit that costs per pupil are not so sensitive to facility size in primary schools, as in intermediate or higher schools, which have specialist facilities. The relatively less expensive schools can only occur with a large population and an effective transportation system. Rural areas and small towns impose a limit on school size, and a lack of transport means that several small schools have to be provided rather than a more economic single unit.

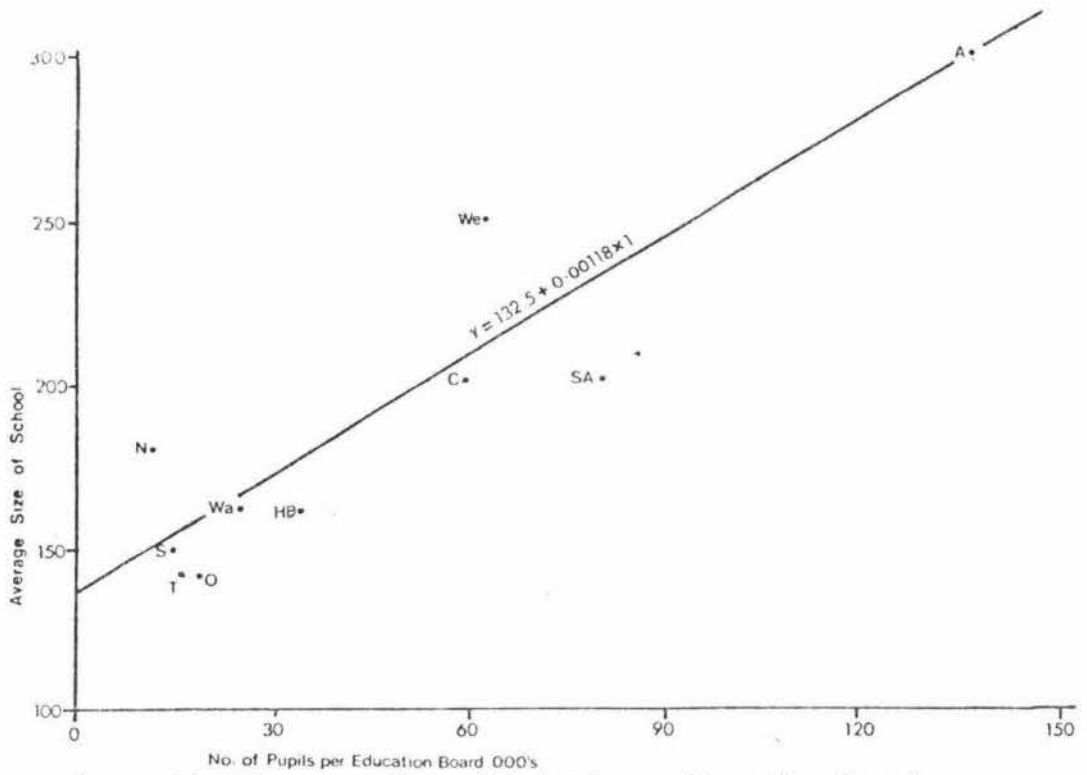
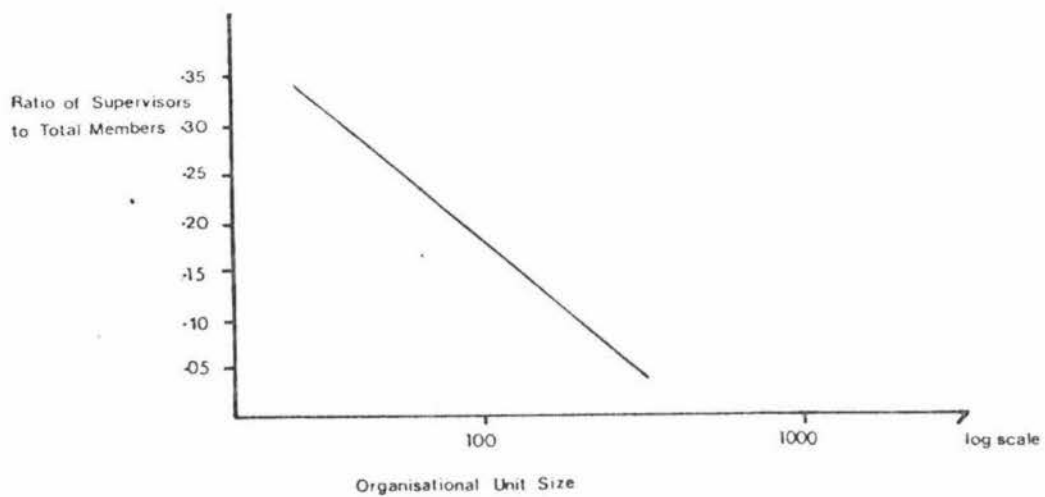


Figure 14: Average Size of School per Education Board.



Adapted from Indik, 1964.

Figure 15: Relationship between Organisational Unit Size and the Supervision Ratio

### Personnel and the Size of Organisation

In examining the relationship between the number of personnel and the size of the organisation, an optimum ratio can be calculated and an evaluation can be made about the efficiency with which different sized work-loads can be administered.

Terrien and Mills (1955, 41) have investigated this relationship with regard to education administration, and concluded that the administrator may expect that the percentage of his organisation which is devoted to administrative tasks may rise as his organisation grows. Logically, this progression must cease at a certain level otherwise a situation would arise where there would be more administrators than people to administer.

Pondy (1969) and Indik (1964) have also examined this relationship, but were principally concerned with the ratio of administrative workers needed to produce different quantities of goods. Pondy defines administrative intensity as the number of managers, professionals and clerical workers divided by the number of craftsmen, operative and labourers employed by the organisation, and, together with 'capital' attributes these inputs as the significant factors in the output of an organisation. This can be outlined in the form of the functional relationship  $Q = f(K.L.A.)$  where Q is the total output, L is the number of production personnel, K is the capital and A is the number of supervisors and f shows us that the value of Q is related to the value of K.L. and A.



Indik (1964) viewed the problem as a psychologist, and related organisational unit size to supervision ratio. His supervision ratio was the ratio of supervisors to total employees and organisational size was defined as the total number of employees. Pondy concluded that administrative density (ratio between numbers of supervisors and ancilliary staff) decreases with organisational size, and Indik likewise, found that the relationship between organisational unit size and the supervision ratio was logarithmic in form and negative in value. (Figure 15) Both conclusions differ from Terrien and Mills (1955), who deduce that school district administration in California, shows a positive relationship between the size of districts and a supervision ratio.

Other variations on the same theme have been conducted by McWhinney (1965) and Chapin (1957). McWhinney's paper reviewed the work that had gone before him and began to be sceptical about the merit in analysing the relationship between efficiency and administrative density and thought that care must be adopted in the construction of a theoretical basis with which to test relationships between supervision ratios and organisational size. Massam (1975) also realises the difficulties of transferring ideas and data from studies on one form of organisation to another and then drawing 'global conclusions'. He suggests that a set of basic equivalents must be used in all future studies, i.e. a standard set of components and elements, identification of the relationships that link the components and means by which a theory can be constructed to measure the relationships.

Despite Massam's sensible conclusions, the practical problems of defining 'a set of basic equivalents', and standardising an approach, is in itself fraught with practical difficulties. This analysis is based on Terrien and Mills (1955) who define the size of organisations into various 'group designations' because of variation in the size of school districts, and compare the administrative component of the school district with the non-administrative component. The criteria with which a distinction is made between 'non-administrative' and 'administrative', is ultimately dependent upon the type of organisation and the system in which it operates. Table 8 displays this point adequately. Differences in the New Zealand education system and the system in California force divisions between administrative personnel and non-administrative personnel that are not the same for each system. For example, District Administration in America will not include the employment of architects and technical staff within the board itself. Normally architectural work is carried out by private contract (Greenfield et al. 1969).

In dealing with a school board as an independent organisation, is only reviewing one stage of education administration in New Zealand. The school district studied by Terrien and Mills, is more of an autonomous unit than the New Zealand education board, therefore it is difficult to compare their findings with the American examples, without taking into account the differences between the two systems. For example the board's administration is linked, firstly with the Department of Education, and secondly

Administrative Personnel	Non-Administrative Personnel (Terrien, Mills, U.S.A. Situations)
District Superintendents Assistant Superintendents and their immediate staff Business managers Principals of all schools	Teachers Nurses Custodians Cafeteria Workers
Administrative Personnel	Non-Administrative Personnel (N.Z. Situations)
Board members and their administrative staff Principals of schools (one teacher schools not included as having a principal) Clerical staff in schools	Architects and Draughtsmen Technical Staff on the board Teachers Cleaners

TABLE 8: Criteria for selection of Administrative/Non Administrative Personnel

the school committee, neither of which will be taken into account. (Table 8).

Totals for each board were calculated; records and annual reports of the boards varied in their detail and information concerning personnel. The Administrative Ratio was calculated by dividing administrative personnel with non-administrative personnel. Requests had to be made to most boards for the majority of information used here; the response was good and a virtually complete data set became available. The basic component of the non-administrative personnel were teachers and principals of schools. Therefore the number and size of the schools will again have a significant bearing on the result. Comparison between the administrative and non-administrative personnel of the education boards themselves is therefore clouded by the pupil-teacher ratio. (Table 9).

### Analysis

Table 9 presents the results and Figure 16 displays the relationship between the Administrative Ratio and Organisational size. ( $r = .659$ ). The positive trend indicates that as the boards get bigger, the ratio of administrative to non administrative personnel also gets larger. Standard quality would mean a perfect relationship which does not exist in reality, therefore study of residual points become significant. As in economies of scale, a rift between the larger boards (We, C., S.A., and A.) and the smaller boards occur (T, N, S, Wa, H, B and O). With the larger boards two residuals stand out.

Board	Administ- rative	Non-Admin- istrative	Ratio	P/T Ratio
Auckland	1102	5413	4.95	23.6
S. Auckland	701	3462	4.90	25.1
Taranaki	165	718	4.35	23.1
Wanganui	292	1112	3.80	22.5
Hawkes Bay	352	1216	3.45	24.1
Wellington	556	2962	5.32	19.8
Nelson	130	514	3.95	20.1
Canterbury	451	2160	4.80	25.9
Otago	272	1032	3.79	21.0
Southland	262	1000	3.81	21.5
TOTALS	4283	19659	4.36	22.9

TABLE 9: Administrative and Non-Administrative Personnel in  
New Zealand Education Boards

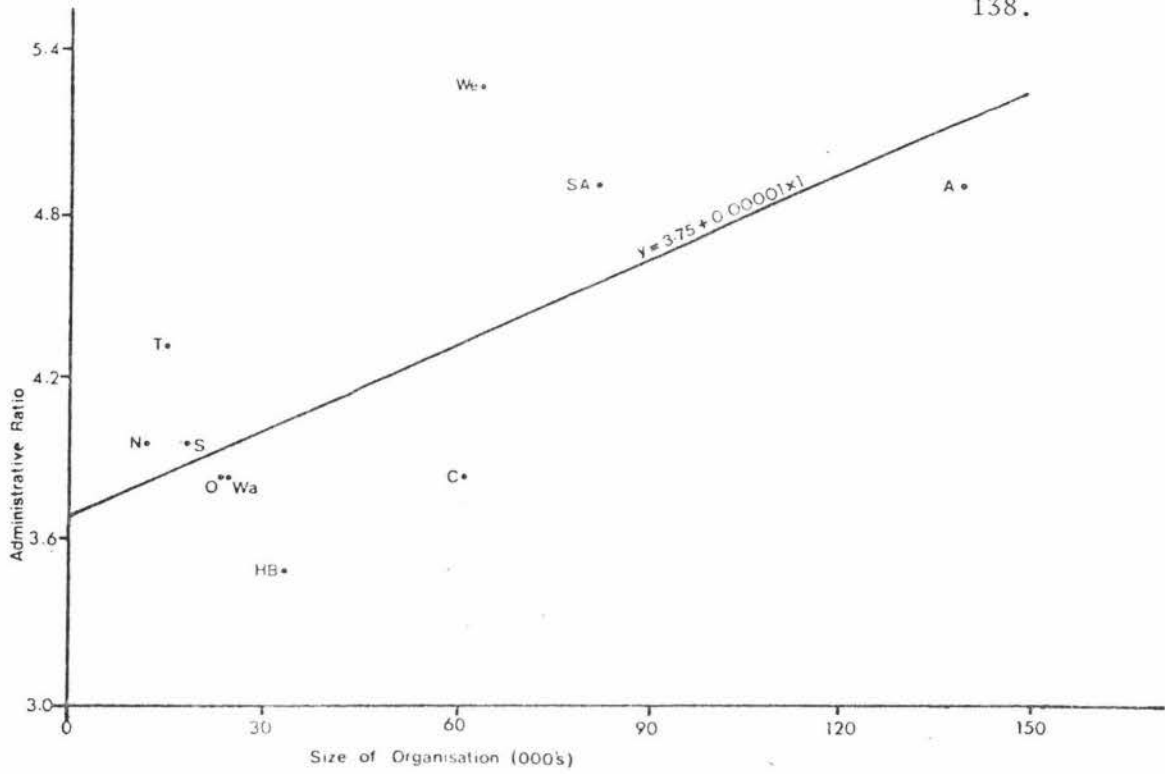


Figure 16: Relationship between Organisational Unit Size and Administrative Ratio per Education Board

Auckland, whose administration ratio remains constant with South Auckland and Canterbury, and Wellington whose ratio is higher than would be expected. Auckland's position would indicate that the largest board has a lower ratio than expected. Hawkes Bay and Canterbury can also be placed in this category.

This result agrees with Terrien and Mills (1955), but disagrees with the more comprehensive studies of Indik (1965) and Pondy (1969). The discrepancy between findings is accounted for according to Indik, as being attributable to the inclusion of staff non-supervisory personnel or teachers in the administrative ratio devised by Terrien and Mills. Terrien (1963), more recently has found evidence in agreement with Indik and Pondy when this factor was considered.

However for the particular organisational structure of the education boards, a hypothesis can be suggested, that as the size of the organisational unit increases, the ratio of administrative to non-administrative personnel will tend to increase (Figure 16). Therefore there is some pressure to increase supervision at a faster rate than that by which the organisation grows. But the position of Auckland, whose administrative ratios changed relatively little over South Auckland and Canterbury, might indicate that a level had been reached, after which the administrative ratios would level out. This is more consistent with the findings of Pondy (1969, 56) who points out that there are administrative economies of scale:

If the size of labour force increases by some percentage  $y$ , then the number of administrative personnel needs to increase only by some percentage  $z$ ,  $z < y$ .

With organisations that are not producing a product requiring a significant amount of technological staff, it is not profitable to maintain or increase administrative intensity as the size of the organisation increases. If the administrative component increases in direct proportion to the organisation at size then there is room for a more effective arrangement of personnel, so that control loss throughout the hierarchical levels will not occur. Control has been defined by Tannenbaum (1968) through his control graph model, as a process in which people or organisations intentionally affect the behaviour of another person, group or organisation. It can be measured in terms of distribution among members of various levels in the organisation. Control loss occurs when duties and responsibilities overlap. According to some theories, control loss occurs in organisations characterised by a relatively equal distribution of control among hierarchical trends. (Farris and Lee, 1969). These types of organisations would be highly democratic rather than authoritarian<sup>and</sup> have equal distribution of control among hierarchical levels, rather than the greatest control occurring at upper levels of the hierarchy.

Pondy (1969), suggests that relatively un-specialised labour intensive organisations, such as church hierarch<sub>A</sub>ies, government agencies and professional associations, would show a positive partial correlation between size of organisation and its administrative component and thus would be suspect to control loss. The New Zealand Education Board system would therefore



appear to be in this category, control loss in this instance, occurring between the relatively high number of principals and administrative personnel needed to control the boards of the larger size.

A more streamlined and authoritarian hierarchical system however would emerge if changes were made to increase efficiency and control. Farris and Butterfield (1972) state that total authoritarian control is more positively correlated with organisational effectiveness than the democratic distribution of control; (these results are based upon sixteen organisations of one type - Brazilian Development Banks). Administering education, however, is not orientated around authoritarian control and a more streamlined approach to the hierarchical structure of authority would not be allied to education principles concerning decentralisation of authority, and the ability of an individual administrator to be effective at the individual level. Parsons (1938, 22-25) sums up the aims of administration in education as

school boards of directors, or trustees and political superiors do not in the nature of the case, simply tell the people of the next level down 'what to do'. This is essentially because the people 'lower down' typically must exercise types of competence and should responsibilities which cannot be regarded as simply delegated by their superiors - the functions at each level are qualitatively different.

The relationship defined here, between organisational size and the administrative ratio of education boards, would therefore appear organisationally inefficient yet display the characteristic need to meet the educational requirements of administration.

## CHAPTER V

## POLICY AND DECENTRALISATION

Decentralisation concerns itself with the problem of making further use of local authorities and other forms of decentralisation involving participation of the people in the administration of services required locally for social and economic development. (U.N. Report, 1962). Decentralisation of authority is usually regarded as beneficial to a system that regards local control and the facility of people to affect the outcome of their own life styles, as important. (Harvey, 1962; Holmes, 1976; Massam, 1975; Smith, 1975).

The welfare advantages of decentralisation are especially important within the education system, as the control of a nation's education is a significant force in the hands of the state and the more centralised it becomes, the more the system is divorced from the influence and direction of the citizen and parent. Education, as a function of the state, must have a close and direct contact with the community (McCarthy, 1961). Therefore administration should aim to provide and maintain public interest in education at the local level.

However, the achievement of centralised authority can be broadly interpreted as being able to produce the remarkable evenness that exists today in the distribution of educational facilities throughout the country, especially concern given to the possible inequalities arising out of the urban/rural

contrast, and secondly the extent to which the teacher is independent of the jealousies and prejudices of a local community (Parkyn, 1954).

Most commentaries on local versus <sup>central</sup> control emphasise the deadening effect of centralised bureaucracy against the vigour and diversity of local control, but generally accept that the effective system must develop characteristics of both types of administrations (Campbell, 1954; Kandel, 1938; Taylor, 1977);

the problem is how much diversity can be accommodated in a natural system where the strong historical thrust has been for equitable provision and uniformity. (Taylor, 1977, 56).

To change completely to decentralised education administration, of all matters, including financial control, the change would have to uproot the basis on which New Zealand's education system has developed. However, movements towards more decentralisation and unification of district organisation are embodied in the policies for change in educational administration.

The Nordmeyer Report (1974, 27) explains how the history of educational administration is littered with unsuccessful attempts to change the school system, the failures were usually caused by the reformers being unable to convince enough of the general public to overcome the entrenched pressures. Nordmeyer admits that because of this historical background -

we have contented ourselves with modest proposals such as we believe to constitute a minimum programme for change. These proposals are however, designed to create growth points for further changes as this becomes practical.

In education board administration, two broad areas of policy change and restructuring that relate to decentralisation are in operation:-

- 1) That the larger boards decentralise where appropriate and that the new boards should adopt a more unified structure.

The Auckland Board now believes that Northland (about 130 schools) is ripe for separation and as a transitional measure it is enlarging its office in Whangarei. (Nordmeyer, 1975, 43).

The Auckland Education Board has moved towards the decentralisation of its offices with the formation of a branch office on the North Shore. (A.J.H.R. E1, 1979, 34).

A departmental management service report has recommended a further expansion of the office and the establishment of an inspectorate to service Northland primary and secondary schools. (A.J.H.R. E1, 1978, 35).

The South Auckland District (403 schools) is the second largest, and the Currie Commission foresaw a need to establish a separate board for the Bay of Plenty. (Nordmeyer, 1974, 43).

It seems to the Commission that the strength of education boards should derive from the close personal knowledge which its members or officers have of the need of their district, and in this respect it believes that very large boards must necessarily find themselves at a disadvantage. (Currie Commission, 1962, 110).

- 2) That the smaller board should be prepared to combine with secondary school Councils and provide a more unified approach to education administration.

At the other extreme we have Nelson (63 schools), Taranaki (114) and Southland (126). In considering the minimum size for economic provision of the range of services needed, allowance must be made not only for present board activities but also for prospective changes - Taranaki and Southland might be viable with a not unreasonable amount of borrowing of specialists from other districts, but that Nelson falls well below the minimum size required to satisfy these professional criteria. (Nordmeyer, 1974, 44).

In Nelson, discussions between the department and a working party are also taking place on the financial authority to be given to that district. This will bring the Nelson Education Board and the Nelson Secondary Schools Council into a joint venture through a co-ordinating committee. (A.J.H.R. E1, 1978, 33).

Taranaki is considering a draft which would provide for four sector boards made up of appointed representatives from the present controlling authorities. These in turn would elect representatives to the proposed district council. (A.J.H.R. E1, 1974, 34).

Otago Education Board district has adopted a move to rationalise the administration of secondary school boards by proposing to bring the Otago High Schools Board office staff under the overall control of the Otago Education Board general manager as soon as the new office is ready. (E1 1979, 34).

For the reasons explained earlier, changes in the structure of education districts, resistance of tradition and history, despite the enthusiastic desire to decentralise as far as possible within the present system. Progress is slow. The boundaries commission (A.J.H.R. E1 1964) for example, set up by a recommendation from the Currie Commission in 1962, advocated the creation of three new boards (Northland, Bay of Plenty and South Canterbury) plus the possibility of the division of Hawkes Bay into two sections, Hawkes Bay and Gisborne East Coast. The commission also recommended the transfer of the Marlborough schools to the Nelson Board. Since then population trends have changed but enough evidence on the grounds of comparing school rolls, areas of district and the position of certain schools was documented, to initiate the move towards a re-organisation of education board boundaries. The commission proposals on Northland and Gisborne/East Coast have been followed up but the remaining three major proposals have received little further attention.

Processes involved in decentralisation, as defined at the beginning of the chapter, involve a complex series of steps in order that responsibilities devolved are monitored and checked and that local administrators are not forced into an administrative situation they cannot handle. The influence of central legislation and control is evident in all moves towards decentralisation. The Special Report (1956) on Administration (E1 1956) identified with the fact that the education boards wanted more money and authority. The Report indicated that as all children should have equal access to education, the maintenance of equality is a central concern, although local control was admitted to be vital to promote local interest in the policies decided upon in the department of education.

A White Lines Policy was outlined in the E1 Report (1956), that formalised the relationship between the department and agencies or boards wanting decentralisation. The policy basically allowed the boards enough money to maintain minimum requirements yet allowed an excess for the boards to use in order to develop their own thinking.

Minimum requirements were judged through the attainment of five conditions or levels of efficiency as assessed by the department.

- 1) A satisfactory method of distributing the total money voted for any activity according to need.
- 2) A statement of the minimum standard of service to be provided by the boards e.g. a standard building code.

3) A method of fixing the maximum cost per unit i.e. there must be a margin between the amount assessed for the prescribed minimum standards (condition 2) and the amount paid to boards on the basis of a maximum cost per unit (condition 3).

4) That the department would be responsible for a system of checking the accounts of the board to ensure that the minimum standards have been met by every board.

5) That agreement by the department and the boards was reached, that joint responsibility was needed to ensure the operation of every agreement reached by the Department and the Boards Association. (A.J.H.R. E1, 1958).

However the outcome was still monitored and controlled by the central department even though the aim was to allow the boards authority, provided that they proved that they could shoulder the extra responsibilities. Ellis (1950) writing at a time when the disadvantages of centralisation were beginning to become well documented, suggested that complete decentralisation was a process that normally had to undergo five stages of re-organisation. Stage 1 consisted of the establishment of an enquiry office, or collection agency, and gradual transfer of powers took place until the severing of a complete regional slice of the department's work and its transfer to district control, subject only to high-level policy decisions, took place. (Stage 5).

Evidence points to a gradual and almost painstaking movement towards decentralisation. The same process applies today as regional and local offices slowly assume their responsibilities.

The conclusion that follows, is that decentralisation is achieved at a controlled and ordered pace, as the central authorities seem to reluctantly release their authority and responsibilities. However, the conclusion of Chapter 3 shows that between the time periods, movement towards centralisation takes place over four time periods (1870, 1890, 1914 and 1947) and that the decrease in the total index from 1947 to 1978 shows a rapid drop in total index value. (Figure 6).

This would discount any idea that the rate of decentralisation is slower than centralisation. The gradual build up in total index value indicates that the process of centralisation in New Zealand Education Administration has taken eighty years and that the process of decentralisation has only begun relatively recently, yet has made significant progress. This trend seems to indicate that more decentralisation will occur as policies advocate more local control of education.

It would seem, however, that despite planned structural decentralisation, the department will still maintain vigilant control over the final decision-making process. Examples here prove that in some cases the presence of the central department creates friction and tension between newly formed offices and the central department. Auckland Education board in this case, is an example because of the size and importance of its hinterland. This is one reason why, in 1948 the department of education set up its own board office to deal with applications for grants from the Auckland Education Board, and from post-primary boards in the



district. Ellis (1950) saw this as 'real decentralisation' and the end product of a series of stages towards this goal.

Complete devolution of power did not happen and problems occurred, especially in the relationships between the department in Wellington and the education board in Auckland and the position of the intermediary Regional Office. Problems existed for the Board as it was never certain whether its representation to the department was being clearly and forcibly relayed by the Regional Office.

Furthermore all adjustments and further queries from Wellington would have to be communicated through the Auckland Office and this procedure obviously would waste time and provide delays and irritations. Therefore a positive plan to decentralise the work load (pseudo-centralisation) has led in some cases to a situation where the Auckland Education Board is forced to confer with the Auckland Regional Office when it is aware that all major policy decisions are made in the central department, to which the board had more direct and effective access prior to 1948 (Cumming, 1959; McCarthy, 1961).

The conclusions of Chapters 2 and 4 help in deciding whether or not the policy proposals will be effective judging from the spatial and economic aspects of the education board systems. They are limited conclusions drawn from a wide set of techniques that could be employed to measure various aspects of efficiency within organisations.

The Index of Efficiency monitored the relationship between cumulative distances from an optimum centre (Figure 3) and the actual centre. The smaller the difference, the more efficient the system in regard to the cumulative distance between the administrative centre and the schools.

For the most recent time period (Table 3) several anomalies occur. First of all, Auckland, which is in the process of dividing into Northland and Auckland, displays a low 'E' index (.640) which indicates that the division will enhance spatial efficiency. Hawkes Bay has a high 'E' Index, despite the isolation of the schools now administered by the Gisborne/East Coast office. Therefore a change has already taken place within the Hawkes Bay education district that has a high 'E' Index. Other areas that were considered by the 1964 Commission on Boundaries to need re-organisation, were South Auckland (.742) and Canterbury (.786), each having relatively low 'E' Indices. Southland also had a low index (.640), the optimum centre being well inland. The same circumstances occurred for Otago (.758). Wellington's situation showed a high 'E' Index (.876) with the optimum centre placed to the north-east; therefore spatially, it still makes sense to incorporate Marlborough with Wellington. To combine it with Nelson (.826), would displace the relatively efficient site of Wellington as the administrative centre for the Wellington Education District. Also Nelson's spatial efficiency would be considerably reduced if Marlborough combined with Nelson despite the fact that Nelson's position economically is weak as it operates on a relatively small scale.

The 'E' Indices are independent of scale and cannot take into account the size of the education district. Economies of scale studies view the concept of efficiency from another viewpoint. It was noted that economies of scale exist for the total grant allocated to the boards of education as well as for the inclusive grants for maintenance and administration. As well as economies of scale existing, the data displayed a division between the larger boards (South Auckland, Auckland, Wellington and Canterbury) and the remainder. Economically the evidence points to more efficiency within the larger boards. However with 'administration expenses', Auckland was in a position that indicated a diseconomy of scale.

The larger boards supported larger schools that were relatively more economic to operate, this therefore being a significant factor in the outcome of the 'economies of scale' study. The smaller the education board, the smaller the size of school it administered. Therefore the economies of scale achieved by the larger boards is to some extent achieved through the running of large schools which are considered by some to be a disadvantageous feature of modern education.

In the light of empirical evidence concerning spatial efficiency and economies of scale, it appears that spatial evidence basically enhances the idea that smaller areas are more compact (The Moment of Inertia Index calculated over four time periods, suggested that compactability was inversely related to unit size, and that the larger the number of

districts and the smaller the size of the board, the more compact the system would be). But the 'E' Indices being independent of scale, do show increasing efficiency with the reduction of the number of education districts from the period 1913 to 1978.

The 'E' Indices agree with the economies of scale study, that suggest that the larger education districts show economies of scale, and that the limit to which this process will occur would be approximately 130,000 pupils - just below the present size of the Auckland Board. Therefore subdivision would only lead to more expense. This conclusion was supported by the positive relationship between organisation size and administrative ratio showing a democratic rather than authoritarian type of organisation. A democratic organisation shows a considerable amount of 'control loss' and this could indicate a loss of administrative efficiency. Therefore smaller boards generally are not as susceptible to control loss and thus can be considered more efficient. Auckland, however, again shows up as beginning to display a lower than expected Administrative Ratio and thus begins to 'level out' the positive relationship.

A basic polarisation of conclusions between the indices of compactability that advocate smaller administrative areas and the 'E' Indices, and economic measures that support the idea of large areas being more efficient, highlights the complexity in trying to assess 'efficiency' of an organisation. Firstly the concept has many variables some of which have been touched upon here. Other areas of analysis could include further work on the optimum placement of administrative centres and boundaries, (Abler et al

1971; Hirst, 1972; Teitz, 1968; White, 1979) and queuing theory (Panico, 1969, Newell, 1971). Within the techniques employed in this study, we have tried to contain the complexities of social, economic, political, and physical environment, into a set of discrete boxes (Massam, 1972) and then relate them to educational administration, whose aims and objectives do not entirely relate to the criteria and assumptions that lie behind the techniques employed.

For example the Department of Education is aware of the fact the decentralised offices are going to cost more to staff and run, and that the whole process of decentralisation will inevitably lead to increased administrative costs. It would be interesting to know how far policy-makers hide behind the concept that education should not be entirely dictated to by cost-benefit analysis:

the words efficiency, and economy, have a cold mechanical ring about them and they are more properly associated with commercial enterprise. While these are of course, of considerable importance in education, our administration must always recognise that the whole purpose of their organisation is to provide the best possible conditions and circumstances in which teachers may teach, and high levels of efficiency and economy are valueless if this purpose is inadequately understood. (Page, 1976, 212).

Already statements from the department explain that resources are becoming scarce and that administration should begin to be aware of the concept of opportunity-cost. This means that as well as thinking of improvements only in terms of incremental additions, we must be prepared to review critically our existing commitments to use of human and other resources. (Renwick, 1978, 5)

Competition for resources has already been stated as a centralising force, but it is also interesting to note, that co-ordination is also a centralising force, and that decentralisation seems to be linked with reorganisation to a more unified district council. It is not surprising that only in Southland and to a limited extent, Northland, have the boards shown any inclination towards unified district councils. Apart from being an abrupt change from past tradition and present practice, there is an unknown factor which will lead many to feel such a change would be a leap in the dark with the method of electing the council. (Nordmeyer, 1974). Although there has been substantial movement in ideology towards decentralisation, it seems that to combine decentralisation with increasing co-ordination, will only in the long run give way to controlled authority and central ideologies. Combine this with the present competition for resources and the future of the welfare and social benefits of decentralisation might be in question.

Although an increasing amount of financial responsibility is being devolved upon local and district authorities, local authorities do not have the final responsibility for incurring expenditure on education. Unless one is able to give away complete financial authority, in some cases, real decentralisation is meaningless. Therefore, once central government attained the reins of financial power from the boards, true decentralisation of administration could not occur, but with more efficient local administrators and more widely adopted techniques in financial management, there is still room to enable more local and district policy making and authority.

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