USING THE SCOTTISH EXPERIENCE TO STUDY THE EFFECTS OF OFFSHORE OIL DEVELOPMENT ON THE SCHOOL SYSTEM IN NEWFOUNDLAND AND LABRADOR.

MARINA ELIZABETH HEWLETT

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USING THE SCOTTISH EXPERIENCE TO STUDY THE EFFECTS OF OFFSHORE OIL DEVELOPMENT ON THE SCHOOL SYSTEM IN NEWFOUNDLAND AND LABRADOR

by

© Marina Elizabeth Hewlett, B.A.(Ed.), Sp. Ed. Dip.

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ABSTRACT

The purpose of this thesis was to examine the potential impact of the development of offshore oil and gas on the structure and process of the public education system in Newfoundland and Labrador. To accomplish this, it was decided to study the effects of the North Sea oil development on the educational system in the Grampian, Shetland and Orkney regions of Scotland. This information was intended to be used as background data when examining the Newfoundland situation.

The data were collected through a case study method. The author travelled to Scotland and interviewed a number of key personnel at different levels of the Scottish education system. The results of the investigation were divided into four areas: Administrative Planning; Learning Climate; Teacher Supply; and Vocational Development.

The effects of the North Sea development on education in Scotland were very localized and differences were found within the three geographical regions impacted by development. Administrative planning in both the Grampian and Shetland areas was disrupted by the significant influx of new students associated with population movements. Large scale school construction was necessary. In the area of learning climate, changes had taken place in the classroom environment to accommodate a multicultural population.

Changes had also taken place among the local Shetland students. Teacher supply shortages in particular subject areas were found to be more a function of career choice and had little to do with offshore oil development. Population increases in the affected areas helped to stabilize school enrolments. The oil development did not affect the school retention rate, but it did open up new occupational choices for Scottish youth.

The Newfoundland and Labrador Education system is different from that of Scotland since there is in existence a denominational education system. The distribution of finances and the allocating of resources to several separate school boards within the same district adds a complexity which did not have to be dealt with in Scotland. A remedial approach evolved in Scottish schools to accommodate incoming students; there is some question as to whether this approach could be implemented in Newfoundland due to a much higher pupil teacher ratio. Changes may be necessary on the part of some teachers to meet the needs of a heterogeneous population. This will depend to a large degree on the rate and size of any offshore related development.

From the information compiled on teacher supply, it can be concluded that Newfoundland does not have the specialist teaching force or the teacher mobility to react to a large influx of students as did Scotland. Secondly, few jobs are available for teachers in the oil industry unless they are

highly specialized or willing to retrain. While the oil development did not affect the school retention rate in Scotland, it cannot be predicted that there will be no effect in Newfoundland since many high school youth feel school is unsuited for them when they perceive legitimate employment opportunity. Newfoundland high school youth will need to be sensitized to the world of work and will need to be educated and qualified to fully benefit from offshore oil development.

ACKNOWLEDGEMENTS

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I would also like to thank William Fordyce of the Grampian Education Council for providing me with easy access to schools and teachers in the Grampian area. The time given to me by all my interviewees is greatly appreciated. I thank Dr. William Spain for having faith in this topic and for providing me with encouragement from the very beginning.

I dedicate this thesis to my husband, Dwight, whose love and inspiration made the completion so much easier.

TABLE OF CONTENTS

Chapter — Page

LIST OF FIGURES

CHAPTER 1

OUTLINE OF STUDY

It is a common observation that one of the permanent dimensions of social life is the process of change. At any one time in community life varying degrees of change permeate all facets of social structure, including education.

Economic development of one kind or another often has varying degrees of influence on all parts of the social structure. The finding of oil and gas off the coast of Newfoundland and Labrador has raised considerable interest concerning the potential impact of its development on the society of the Province. The core of this thesis is to focus on the potential impact of offshore oil and gas on the structure and process of education in Newfoundland and Labrador.

Before presenting the research problems in more detail and outlining the process of data collection and analysis, it is appropriate to look at the idea of economic development in general and the complications of the interactions between such development and the schooling process in particular.

Economic Development

Historically, economic development has been seen to be

intricately intertwined with all aspects of community life and has been recorded to have had significant and long lasting conseguences. The Industrial Revolution had global repercussions for world economics; productivity was drastically increased while women and children were integrated into the labour market. This type of economic growth not only had strong effects on the family unit but also interfered with the education of the children who were involved.

Economic development in Canada has lead to urbanization in many provinces as a consequence of a shift of population from the rural areas to larger urban regions. Associated with this urbanization are different value systems, in particular, a weakening of the family structure and the loss of small town neighbourhood communications. Urbanization effects have also influenced the education system with the closing of the small town rural school and the promotion of the large urban feeder school concept. This change of schooling patterns may very well result in changes within the schools themselves. For example, important changes may occur in the interpersonal relations of student and teachers. The province of Alberta can be used as an example of the effects of urbanization. The 1971 census show that 73.5% of the Alberta population was classified as urban; this was a major change from the days when the province's main industry was agriculture with a predominantly rural base (Gibbins, 1980).

Whether a major development occurs in a rural or urban

area, there are some characteristics of the development which are common to both, but may be more pronounced in a rural setting. The most important of these characteristics, since it inevitably influences all the others, is demographic movement. Experience has shown that a major development often leads to migration, both internally and externally. This can be illustrated by observing many places where various types of development have taken place, such as Churchill Falls, Alberta and Scotland. The unemployed migrated to those areas to obtain work. Such an influx of a transient population obviously places pressures on the existing social fabric. Housing frequently becomes in short supply, and more costly. Social work facilities usually need to be expanded to deal with the increased and changing population. Health services may need to be increased and the cost and standard of living may change.

The educational system also reflects the society in which it is imbedded. It may also be said that it is a conservative force which is designed to operate in, and preserve the existing structure. It follows that a development which disturbs that structure must be accommodated by the educational system. Changes in education will be required to match the changes occurring in the society around it.

Recent discoveries of oil and gas off the coast of Newfoundland and Labrador, and the prospects for development in these areas, point to the importance of studying the possible impacts of such development on education in this

province.

The Research Problem

The purpose of this thesis is to examine the potential impact of the development of offshore oil and gas on the structure and process of education in Newfoundland and Labrador. To do this it was decided to study the Scottish experience with respect to the development of offshore oil and gas on education in that country, and to use this information as background in speculating on the consequences of the development of offshore oil and gas on education in Newfoundland and Labrador. It is believed that this could help to identify the challenge facing education and educators in this province.

Before outlining the process of data collection and analysis, it is appropriate to explain the reasons for selecting Scotland as the area of investigation.

The Experience in Scotland

Newfoundland educators are in a unique and fortunate position to be able to study areas such as Scotland where there have been oil developments. More than any other development site in the world, the Scottish experience has been consistently viewed by others to be able to provide insights for Newfoundland into the problems of offshore

development (House, 1980; Scarlett, 1977; Storey, 1977).

Scarlett (1977) writes:

> Both Newfoundland and Scotland had explorations thought at the time to be at the frontier of technological capability. Each is an oil deficient region, formerly a net importer. They both had and continue with a considerable dependence on the fishery. In both, there are century old communities exposed to unprecedented economic and social changes, some of which were a semi-subsistent and traditional society as in the Orkney's and Shetlands. (p. 7)

Apart from these similarities, Storey (1977) has drawn a parallel between the urban and rural areas of Scotland and Newfoundland. Both have a strong sense of family loyalty accompanied by traditional life styles. A strong cultural identity exists in both locations which is unique from that of the countries of which they are a part. Newfoundland and Scotland also have their own educational systems over which they have complete autonomy. Until oil development occurred in Scotland, the highlands and islands experienced high out-migrations among young people (Birk & Sewel, 1979). Rural Newfoundland has experienced this problem for many years.

The infrastructure which already existed in Aberdeen made it the natural supply center for the oil industry in Scotland. It has been speculated that St. John's may follow a similar pattern. St. John's and Aberdeen both have the necessary transportation and port facilities, a wide range of existing industrial activities, as well as the presence of Government and other decision makers. Like Aberdeen, St. John's is expected to experience a steady growth in

population concomitant with offshore development.

This is not to say that Newfoundland and Scotland are similar in all respects as there are some very real differences. The North Sea oil development has occurred on a larger and more rapid scale than that which Newfoundland is currently experiencing. There is also a major difference in population size, with the Grampian region alone having a population of 500,000, almost equal to the total population of Newfoundland and Labrador. However, despite the differences which exist between the two locations, a documentation of the Scottish experience will be useful, not as much for the answers it will provide as for the questions it will suggest about the impact of a large development on particular aspects of the education system, namely teacher supply, administrative planning, vocational development and learning climate. Each of these areas of investigation will be briefly described in the following sections.

Teacher Supply

There is a degree of uneasiness among educators in Newfoundland that the development of offshore oil will have negative effects on teacher supply. This concern is of importance because of recent reports suggesting that there are other forces at work to decrease supply. First, there has been a significant decline in the number of students enrolled in teacher training, especially in specialty areas (Pope, 1982). Opportunity for youth in the event of a

development might be expected to influence this trend even more. Secondly, Martin (1981) has suggested that some teachers in the Atlantic Provinces have experience other than teaching that would qualify them to compete for jobs in an oil development, putting further pressure on the teaching force.

There have been indications locally in Newfoundland that offshore development in Scotland was responsible for severe teacher shortage, in some specialty areas, specifically science and math (Michie, 1980; Thomasson, 1980). This research will attempt to clarify how many Scottish teachers left the profession to work with industry, what their educational qualifications were, and the types of occupations they entered. It is believed this information will give some insights into the possible problems Newfoundland may experience in the future.

Administrative Planning

The administrators who make the major decisions on the overall functioning and planning of education in this province may have new challenges facing them with the development of offshore oil and gas. The internal migration and influx of indigenous populations which usually accompany large developments will present problems for those in planning positions. The most obvious effect of an increase in population is the need for classroom accommodation. Staple (1981) suggests:

> ... the increase of one or two students per classroom while not seen as significant increases justifying expanded facilities, puts additional pressure on teachers, many of whom are now teaching over-size classes. This obviously will have a detrimental effect on the students and the delivery of their programs of study ... (p. 17)

The perceptions and expectations of public education for those moving into the province may be different from those of the local population. Their style of interactions with teachers and administrators may be different. The educational system itself, with a religious denominational organization may pose difficulties for some parents. The denominations, rather than government, control capital expansion of the system and have major imput in determining the programs offered in the school. For this and other reasons, there frequently are differences in educational opportunity in specific regions of the Province. Since many rural areas have been selected for potential development sites, it is quite possible this difference in educational opportunity will be questioned by incomers from metropolitan areas who are used to a wide variety of educational services.

A documentation of the adjustment and changes which the Scottish administrators experienced can provide Newfoundland educators with some ideas on how a large development can influence the overall planning of education.

Vocational Development

A major goal of education in the Province is the

facilitation of the vocational development of youth. The prospect of oil development has resulted in a plethora of expectations about the future; there is much, however, which is unknown about the effects of a development on the vocational aspirations of youth.

Newfoundland presently has the highest drop-out rate in Canada. Martin (1980) has described a development situation in which high school youth are attracted away from post-secondary and high school education, and into available jobs requiring low levels of education and little training. He suggests that this could happen in a rapid oil development, and that if it did, a relative loss would occur in the number of Newfoundlanders able to qualify for jobs at the technical and managerial level. It must be remembered that it has been the policy of the provincial government to enhance the opportunity of Newfoundlanders to compete for these jobs.

Very little is known concerning the effects of the North Sea development on the vocational training of Scottish youth. This research hopes to determine the schooling patterns required for vocational programs in Scotland and inquire to discover if there were any training programs for youth specifically related to the oil industry. The effects of the development on the school retention rate in the oil regions of Scotland will also be studied.

Learning Climate

A veritable Pandora's box is opened when learning climate factors are considered. Included are all those factors which affect the ability of the school system to accommodate the needs of a heterogeneous population of students. Schools are an important concern of families moving from one location to another, and schooling can be expected to be a major factor in determining the overall socialization of employees involved with the oil industry.

Many aspects of the educational system in Newfoundland and Labrador are different from systems in other parts of North America. The system in Newfoundland operates in a work environment which is not visibly rich in the variety of manufacturing, service and technical industries that are typical of many other areas of the continent. In fact, many communities have a single industry dependence around fishing, paper and mining. There is a unilingual language environment, and in virtually all areas no provision for the education of non-Anglophone children. Where the opportunity exists, it tends to be over-subscribed, and there are only tentative commitments to the continuation of the program.

There also arises the question of placement. Martin (1980) writes:

> In light of the international component of those working in the oil industry, the local school population could change from a relatively homogeneous one to a multicultural mosaic; the teacher faced with a multicultural audience in the classroom will face the problem of assessing the level of knowledge and

> achievement of the newcomer in relation to the organization and expectations of the local school. (p. 3)

Also included in the learning climate factors is the curriculum. Staple (1981) suggested:

> The curriculum could come under pressure from groups moving into the province. Oil company personnel, desiring an education for their children similar to that experienced in their previous place of residence, may make demands upon our schools which are inconsistent with the philosophy of our curriculum structure. (p. 16)

The possibilities which have been described suggest that parents with school age children who come to the province, may be confronted with a wide range of problems in integrating their children into the system. In addition, change may also be experienced by those parents and children who are indigenous to the development areas. Inevitably, the change will be felt in the classroom, where the teacher will be responsible for accommodating the new mixtures of students.

Reports from Scotland suggest that climatic factors were important in some instances. This information, however, is presently very fragmented and needs clarification. Before discussing the Scottish experience and showing how it might be beneficial to understanding these dimensions in the educational process of Newfoundland and Labrador, it is necessary to describe the methods of data collection and the process of data analysis in this research.

Data Collection

Having completed an extensive search of the research conducted and the materials published discussing the subject of offshore and onshore oil development and its effects on the educational environment, it was found that education was only briefly mentioned in the context of social, economic and environmental impact studies. Given this lack of information, it was decided to conduct a study of the Scottish educational experiences resulting from the development of oil off the Scottish coast. Rather than mailing questionnaires to personnel in Scotland, it was decided a case study would be more appropriate for data collection. The data, therefore, has been collected during a field trip to the affected regions of Scotland. Interviews were conducted with a number of key personnel at different levels of the educational system and observations were made in post-secondary, elementary and secondary schools.

To elaborate, an eighteen day field trip was spent travelling to three regions of Scotland; namely, Grampian, Shetland and Orkney. Prior to this field trip, arrangements were made with fifteen key educational personnel for interviews concerning their observations of the impact of offshore oil development on education in these regions. The interviews were arranged by obtaining a list of the educational directors for the Grampian, Shetland and Orkney regions from the library of the Newfoundland Teachers'

Association. Correspondence was established with the directors of education for the Shetland Islands--Mr. R. A. Barnes; the director for the Orkney Islands--Mr. Alexander Bain; and the deputy-director of the Grampian Region--Mr. William Fordyce. Mr. Fordyce was also asked to provide a list of names and addresses of other personnel involved in any way with the educational process. The assistance of Mr. Barnes and Mr. Fordyce was also obtained in organizing interviews with particular headmasters in their jurisdictions. Mr. Bain was not asked to do this since the development on the Orkney Islands was not of the magnitude as that of Grampian and Shetland. It was felt more time needed to be allocated to those areas.

The interviews themselves were both formal and informal with the formal following specific guideline questions (see Appendix A). The following are examples of the questions asked:

1. What has been the traditional source of students in the schools of the various areas? From local established families or itinerant families?

2. Have there been recent changes in the pattern of sources in recent years apart from movement occasioned by oil development?

3. What was the chronology of events in the various areas with respect to oil development?

4. What was the language background of the students?

Different groups of questions were asked, depending on the occupational position of the person being interviewed. The directors and deputy-director were questioned on how oil development had affected the management aspects of educational planning, whereas the headmasters were questioned on the methods of accommodation which had taken place with an influx of new people into their schools. Other questions were asked, depending on the answers given; this often led to a more indepth analysis of the question posed. All formal interviews took place in the office of the person interviewed.

Because of the wide variety of schools arranged for the author to visit, it was not always possible to formally interview the headmaster. Direct and precise questions were asked during these informal interviews, however, and much was observed from them which helped to form conclusions on the effects of oil development on the Grampian and Shetland regions. Every opportunity was taken at group gatherings to seek the opinions and viewpoints of those people directly involved with the oil industry.

Data Analysis

Given the focus of this study and the qualitative nature of the data collected, the present analysis is in

line with one of the contemporary approaches to qualitative data. Specifically, this approach has been described by Glaser and Strauss (1967) as "the constant comparative method" of data analysis (p. 101). While the present analysis is not concerned with the development of grounded theory as elaborated on by Glaser and Strauss, the analysis of the present data follows their line of reasoning. That is, rather than to convert qualitative data into a crudely quantifiable form, the idea is to simultaneously combine a form of coding and analysis that will allow one to focus on the major themes to be found throughout one's data. In the present analysis this means the themes which can be isolated in the information presented by the interviewees, and the themes to be found in the field notes taken during the researcher's observation of the educational systems in the three regions of Scotland. In pinpointing these themes as a form of data analysis, the chapters of this thesis take their form.

The first task is to describe the different aspects of education in Scotland and then to extrapolate how the development of offshore oil affected the educational process there. Once the Scottish experience has been described, attention will be given to the Newfoundland scene and to speculating on how the Scottish experience may be used to give further understanding of the potential impact of the development of offshore oil and gas on the structure and process of education in this province.

CHAPTER 2

THE SCOTTISH SETTING

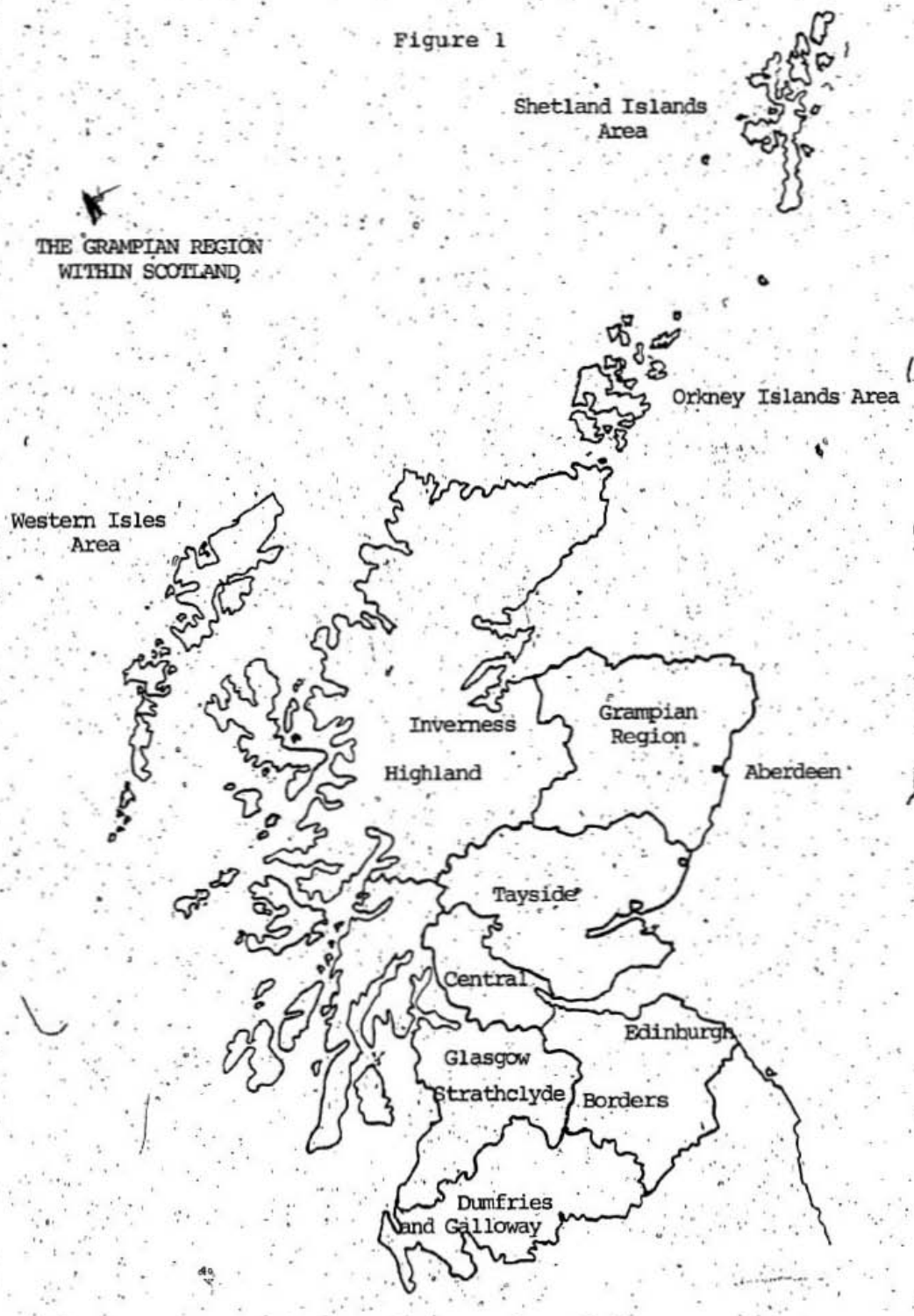
Demography and Geography of Scotland

Scotland is the northern region of the United Kingdom, consisting of a large portion of mainland and a very large number of adjacent islands, stretching up to the Shetlands, which straddle the 60th parallel (see Figure 1). The mainland portion of Scotland is slightly smaller than England but has a far smaller population, with approximately seven million of the United Kingdom's total population of sixty million.

Geographically the country divides into four areas, running roughly Southwest to Northeast. At the border is a belt of gentle uplands with small fertile valleys, very gentle rounded hills and granite tops, which are known as the Lowlands. The lowland area is underpopulated with the main industry being agricultural, although there are a few mines, and fishing around the coastline.

In the lower area of the country the farming is mostly barley, beef and dairy, with sheep farming the mainstay of the hill farms. The cereal growers, in the main, live fairly well; the beef and dairy growers tend to go from feast to famine, but, on average, stay afloat and reasonably comfortable.

Figure 1


Shetland Islands Area
THE GRAMPIAN REGION WITHIN SCOTLAND
Orkney Islands Area
Western Isles Area
Inverness
Highland
Grampian Region
Aberdeen
Tayside
Central
Edinburgh
Glasgow
Strathclyde
Borders
Dumfries and Galloway

Going North, the Midlands or central belt of Scotland takes in Glasgow and Edinburgh and the two group rivers, the Forth and the Clyde. The central belt is the center for industry in Scotland. It has the largest amount of fertile farmland, nearly all of the mining and contains about two-thirds of the population. Almost exactly one-half of the population of Scotland lives in Glasgow, with Edinburgh being the second largest city. A large number of government offices are located in this particular area, as would be expected from the population's distribution. Even though this region has the bulk of the new high technology industries, it still has the highest unemployment and the largest number of labour-intensive, traditional heavy engineering industries which are either moribund or rapidly so becoming.

A great deal of fabrication and engineering work for the oil related sector is undertaken on the Clyde and a certain amount in Leith, near Edinburgh. In addition, there is one medium-sized module fabrication facility at Dundee on the river Tay.

To the north of the Central belt is the mountainous belt of Scotland known as the Highlands. This takes in the Grampian Mountains and the West Coast islands and covers about one-third of the total Scottish land mass. This area is sparsely populated, the traditional industries being land-owning on a grand scale, crofting and fishing, or a combination of the last two.

One of the most recent industries is tourism, which overall has been fairly successful. Hydro-electricity, throughout its history an unqualified success, has recently been copied extensively and very successfully in the Far East and in Asia.

The highland region is also famous for its voluntary poverty, where for many years, crofters have been prepared to scratch a living on anything up to twelve acres of poor quality land, with such seasonal employment as can be obtained. Crofters often bring up their families on a total cash income of less than seven hundred pounds. This region, however, has produced the backbone of some of the most successful fighting troops the British Army has had throughout the last one hundred years. The fishing industry in this area of Scotland is largely inshore and is fairly successful. The only real oil related impact on this region has been the three main fabrication yards, Ardersier, Nigg Bay, and Loch Kishorn in Rausay Sound.

Further North is the Northern Flatlands, which comprise Buchan, Banff, the South Coast of the Moray Firth, the recently named Grampian Region, the Black Isle, Caithness and the Northern Isles. This is a prosperous area due to agriculture and fishing; some parts have recently been affected by the development of North Sea oil. Both of Scotland's growing cities are in this area, although they are growing for entirely different reasons. Inverness, which is the capital of the Highlands, is growing in a

natural way as the administrative and logistic center for the Highland and Northern Flatland region (Lidderdale, 1982).

The growth of the Grampian Region, and, in particular, the city of Aberdeen, can be attributed to two factors. Firstly, and independently of oil development, the Region was accorded development area status in 1966. The second influence was the development of offshore oil and gas. By contrast to a slowly dwindling population throughout the postwar years, the population has grown by 30,000 between 1971 and 1979 to a level of 469,000 (Grampian Regional Council, 1980) (See Appendix B).

Aberdeen, the largest center within the Grampian Region, has, over the last decade, emerged as the most dynamic area of economic activity in Britain. MacKay (1981) has suggested that a crucial factor in this development is the existence or creation of agglomeration economics. Agglomeration is the logical pattern for units of an output-oriented industry whose markets are concentrated at one or a few locations (p. 10). A characteristic of agglomeration is that each individual company finds the presence of the others beneficial. British Petroleum, Shell and Amoco were the first companies to choose Aberdeen as their exploration headquarters. Following their decision, the supply/servicing companies joined them, thus establishing Aberdeen as the administrative and supply center for the North Sea oil development (Cockhead, 1981).

The Orkney and Shetland Islands, located to the north of the Grampian Region, in the past depended largely on fishing, agriculture and knitwear for their main source of income (Marshall, 1981). Since 1971, great changes have occurred, resulting from the discoveries of reserves of oil and gas beneath the same seas which were the major support of the islands' economy. Graham (1981) recounted that

> It is ten years that changed the face of Shetland, that gave virtual full employment to the local population at a time when mass unemployment plagued the rest of the nation and ten years that saw Shetland's population increase by an incredible fifty-four percent. (p. 13)

Shetland is now the host for the Sullom Voe terminal, which is one of the largest oil and gas terminals in Europe.

The Orkney Islands have also been affected by the development of oil and gas. Agriculture, however, is still the major source of employment with seventy to eighty percent of the population being farmers of some kind. A terminal located at Flotta employs three hundred people. It was built and is managed by Occidental, an American oil company with a policy to employ local Orkneans as much as possible. The construction of the Flotta terminal did not have as much of an impact in the Orkneys as did Sullom Voe on the Shetlands due to the smaller scale of the project (Bain, 1982).

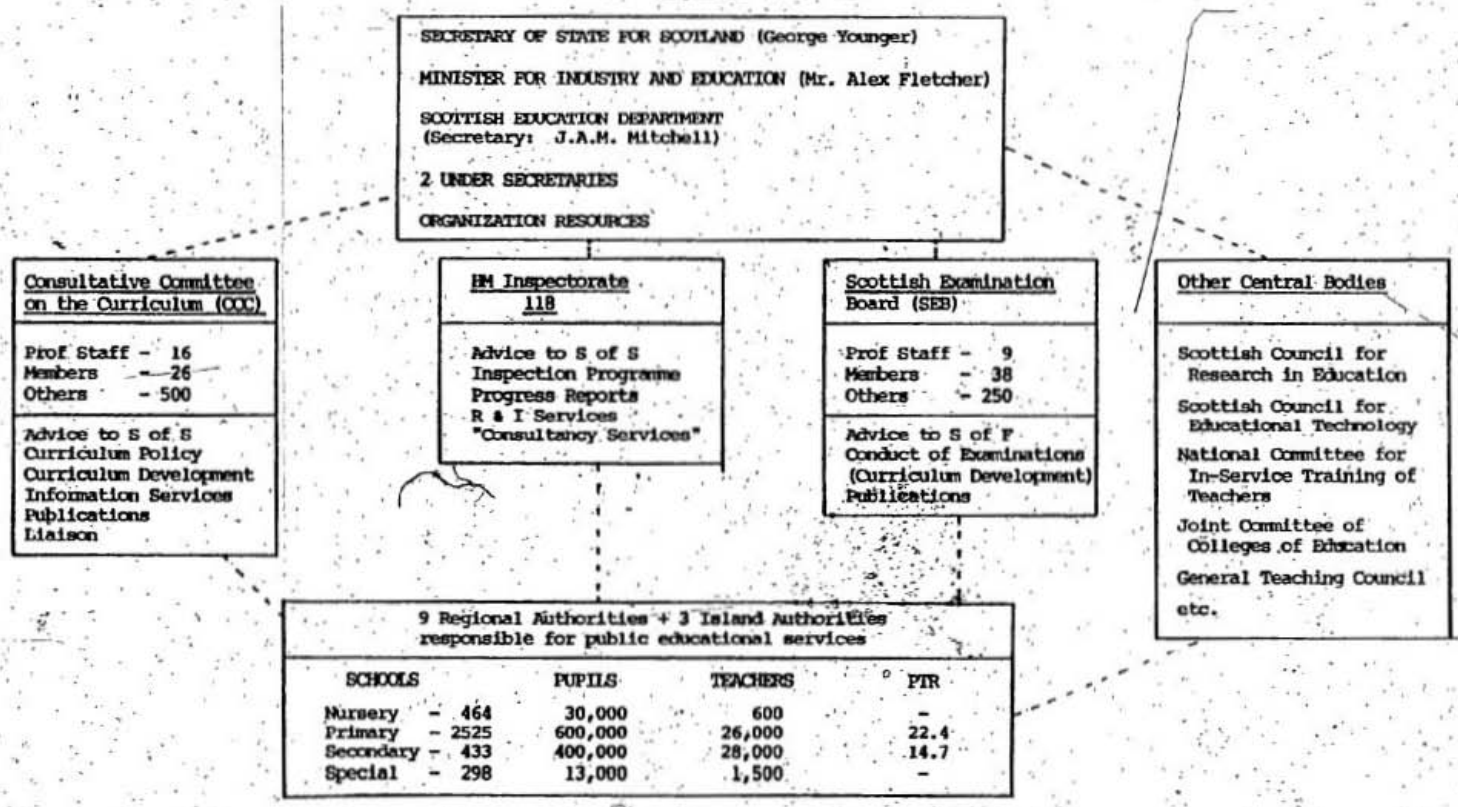
This overview of the demography and geography of Scotland sets the stage for a description of the organization of the Scottish educational system, thereby leading into the core problem of this research.

The Organization of the Scottish Education System

Public education in Scotland has evolved over several centuries to meet the requirements of the country, and is organized to be distinct and separate from education in England, even though the ultimate responsibility for education is with the Parliament of the United Kingdom. A diagram showing the organization can be found in Figure 2.

The ultimate parliamentary responsibility for education rests with the Secretary of State for Scotland, and, through him, with the Minister for Industry and Education. The Secretary of State discharges his functions with regard to education primarily through the Scottish Education Department. The Secretary of the Scottish Education Department (SED) is the chief executive officer and is responsible to the Secretary of State and the Minister for Industry and Education for the work of the entire department. The Secretary of the SED has two under-secretaries; one of these under-secretaries is in charge of four divisions, primarily concerned with the organization and content of education, while the second under-secretary is in charge of four divisions which are concerned with resources such as

Figure 2


SECRETARY OF STATE FOR SCOTLAND (George Younger)
MINISTER FOR INDUSTRY AND EDUCATION (Mr. Alex Fletcher)
SCOTTISH EDUCATION DEPARTMENT
(Secretary: J.A.M. Mitchell)
2 UNDER SECRETARIES
ORGANIZATION RESOURCES
Consultative Committee on the Curriculum (CCC)
Prof Staff - 16
Members - 26
Others - 500
Advice to S of S
Curriculum Policy
Curriculum Development
Information Services
Publications
Liaison
HM Inspectorate 118
Advice to S of S
Inspection Programme
Progress Reports
R & I Services
"Consultancy Services"
Scottish Examination Board (SEB)
Prof Staff - 9
Members - 38
Others - 250
Advice to S of F
Conduct of Examinations
(Curriculum Development)
Publications
Other Central Bodies
Scottish Council for Research in Education
Scottish Council for Educational Technology
National Committee for In-Service Training of Teachers
Joint Committee of Colleges of Education
General Teaching Council
etc.
9 Regional Authorities + 3 Island Authorities responsible for public educational services
SCHOOLS
Nursery - 464
Primary - 2525
Secondary - 433
Special - 298
PUPILS
30,000
600,000
400,000
13,000
TEACHERS
600
26,000
28,000
1,500
PTR
-
22.4
14.7
-

buildings, teachers, and child care. A ninth division, consisting of finance, planning and statistics, reports directly to the Secretary of the Department (Fordyce, 1982).

The functions of the Secretary of State, with regard to education, fall into four categories. These include legislative, judicial, financial and administrative.

In general, legislation is prepared for the Parliament, although the Secretary of State does have emergency powers to issue provisional regulations. Important areas of regulatory control include teacher salaries, the school meal programs and the rate of growth, distribution and nature of educational buildings. Grants to aid private institutions have been provided for by legislation. This, however, is becoming a thing of the past.

The Secretary of State also exercises a judicial function. He is empowered to initiate local inquiries regarding any of the areas of his responsibilities. Teachers can appeal to the Secretary of State regarding decisions by the regional educational authority.

The final decision on finances also lies with the Secretary of State. Public education in Scotland is financed through two major sources of funding--local taxation, and grants from the Scottish Development Department. These funds are administered by the regional education authorities, which are roughly comparable to the local school boards in Newfoundland. The regional authorities prepare a budget based on local requirements. Included in

this budget is the amount which the regional government will provide through a local property tax. The Secretary of State is asked to make up the difference in rate support grants. The percentage paid to local authorities from the national government may vary slightly each year. The amount paid nationally in 1977-78, for example, was sixty-eight percent. Each region is allocated a different amount depending on how much can be collected locally. The important point to note here is that the local taxation is a part of the total budget approved by the Secretary of State. To some extent, then, all aspects of financing, including teacher salaries, operating and capital expenditures, are controlled by the Secretary of State.

The administrative and executive functions of the Secretary of State are the largest category and cover the day-to-day work of the Scottish Education Department, which, as the central supervisory authority, guides the development of Scottish education in almost all its aspects. Some of these responsibilities include supervising the provision by education authorities of primary, secondary and further education, maintaining a general oversight of staffing, curricula and methods, and being responsible for the certification and superannuation of teachers (Scottish Education Department, 1977).

Consultative Committee on the Curriculum

The Consultative Committee on the Curriculum's (CCC)

main responsibility is to advise the Secretary of State on all curriculum matters. In each particular school, however, the headmasters and subject department heads have the final responsibility for the curriculum taught. The Secretary of the Scottish Education Department is chairman of the committee which includes the membership of the senior chief inspector of schools.

Through the CCC, the Secretary of State provides national guidance on the curriculum by issuing circulars, memoranda and a series of curriculum papers (Scottish Education Department, 1977).

Her Majesty's Inspectorate

There are 120 inspectorates in Scotland, headed by a services chief inspector and two deputies, one of which is responsible for school education; the other for post-secondary. There are 11 chief inspectors; the duties of eight of the total lie in the areas of pre-school and primary, secondary, further, informal, higher and teacher education. The other three are responsible for the general oversight of the three territorial divisions into which Scotland is divided for inspection purposes. The traditional role of the Inspectorate has been to keep a close eye on the schools; however, the role is becoming more and more one of an advisor on curriculum matters to the educationists in the schools, the headmaster and their department heads (Scottish Education Department, 1977).

The Scottish Certificate of Education Examination Board

The Scottish Examination Board consists of representatives of the Scottish teaching profession, universities, colleges, industry and the Scottish Education Department. They are responsible for awarding secondary certifications and for the organization and distribution of examinations.

Other Central Bodies

These central bodies include the Scottish Council for Research in Education, The Scottish Council for Educational Technology, and many other central committees which work through and with the Secretary of State and the twelve Regional and Island authorities.

Regional and Island Authorities

The regional and island areas have an elected educational council. The councils appoint education committees, which are made up of elected and non-elected members. The non-elected members are those who have been involved with local educational planning in the past. A chief administrative officer, known as the Director of Education is appointed by the Council.

The responsibilities of the education authorities lie in the areas of school construction, hiring of educational advisors and teachers, and the provision of instructional materials. They are also responsible for the organization and implementation of the curriculum but this responsibility

is usually left with the head teachers and headmasters in the individual schools (Scottish Education Department, 1977). Before describing the general characteristics of the Scottish schools, it is first necessary to explain the training of the Scottish teacher to provide a more accurate description of the schools themselves.

Teacher Training

There are nine general colleges of education in Scotland which provide primary and secondary training. There is also one college which specializes in physical education for women. The colleges of education are financed by the Secretary of State, and, to a lesser degree, by the regional authorities.

Primary Training

Primary teachers in Scotland complete a three year diploma course, at a college of education. This qualifies them to teach in the primary school. Primary teachers are trained to teach in all subjects of primary education. There are, however, specialists which may be in a school on a full time basis or shared between a number of schools; this depends on the size of the student population. Primary teachers who specialize in subjects such as music, drama and

art may also be found teaching in the comprehensive high schools (Forrester, 1982).

Secondary Training

An individual wishing to become a teacher in a secondary school first completes a university degree. He/she then applies to a college of education and completes one year of study before permission to teach is granted. Only in the case of the degree of B.Ed. is the one year professional training excluded. The Scottish secondary teacher, because of the mode of training, is usually a specialist in one or more areas. He is also qualified to do things other than teaching. This specialization enables the Scottish schools to offer a wide variety of courses. The following section describes the Scottish school system and its general characteristics (Forrester, 1982).

General Characteristics of Scottish Schools

There are two main kinds of schools in Scotland administered by the twelve regional and islands education authorities. These include public schools which are attended by ninety-six percent of the population, and independent or private schools which do not receive any assistance from public funds. There were, as well, granted-aided schools run by voluntary managers and assisted by grants from the Scottish Education Department. However, elimination of

these grants was under consideration in 1982.

The public schools are generally co-educational; and the majority are non-denominational. Although a few denominational schools exist, the main difference from other public schools is that the character and religious belief of the staff members are subject to approval by the church authorities (Scottish Education Department, 1977).

Primary Schools

Students normally attend the neighbourhood primary school from the age of five, the primary course lasting for seven years. When an availability of space exists, some educational authorities offer a choice of schools. The final decision, however, is made by the parents and the authority concerned. Primary schools are being planned smaller, many are now being designed for not more than four hundred and fifty students.

In the early 1970's the Scottish and United Kingdom educational systems were influenced by a number of reports, all of which referred to the concepts of open-class child centered ideology. This started a move toward a more progressive education with a more affective style of learning (Mudie, 1982). Many primary schools now are designed on the open plan system.

The responsibilities of a head master are in the areas of organization and planning, as well as providing links with the parents and the secondary schools. There are a number of

assistant head masters, one of which is usually responsible for children up to eight years of age; this person is a specialist in the area of primary education. The pupil-teacher ratio in Scottish primary schools between 1974 and 1980 improved from 24.8 to 20.3. This ratio enables students and teachers to work very closely together. There are also remedial teachers who provide extra assistance to students with learning difficulties. Teachers specializing in subjects such as art, music and physical education visit the schools on a regular basis.

The Primary Curriculum

The curriculum in the primary schools is designed by the school administrators and teachers. It is structured to meet the needs of the pupil population. Many courses are taught in small groups with some students working individually on themes and projects. The practical subjects, including reading, writing and arithmetic, still form the major component of primary education; they are now taught principally by activity-oriented methods. Much emphasis is placed on dramatic activities which are designed to improve spoken language and social development. Self-exprssion is encouraged in craft-work, art, music and physical activity. The scientific aspects of the curriculum are taught through observation and experimentation (Scottish Education Department, n.d.).

Comprehensive-Secondary Schools

Transfer to secondary school usually takes place between the ages of eleven and a half and twelve and a half, after completing seven years in the primary school. During the first two years of secondary school, all students follow the same range of courses which are designed to determine where their interests and abilities lie. These courses normally include English, history, geography, mathematics, science, art, music, physical education, technical education and home economics. Most students also begin the study of a modern foreign language.

Students decide on the areas of specializing at the beginning of their third year. This decision is a very important one and is made with the advice and assistance of parents and teachers; the subjects they choose determine the route which the remainder of their school studies will follow (see Figure 3). Most teachers encourage pupils to continue the study of English, arithmetic, or mathematics and a social subject (history, geography and modern studies) and to choose up to four other subjects from the sciences, languages, technical education, home economics, art, music and commerce. This is a time when students decide if they want to complete the courses for the Scottish Certificate of Education (S.C.E.) or the Certificate of Secondary Education (C.S.E). A pupil may do a S.C.E. course (referred to as an "O" grade) if he is performing well in that area, and do a C.S.E. course in a subject which he finds more

Figure 3

Schools in Scotland - Ages and Stages

Nursery

Age 3-5 ☐ Available only in some areas of Scotland

Primary

Age 5-12 P1
P2
P3
P4
P5
P6
P7

S1
S2 Transfer to secondary school occurs between the ages of 11½ - 12½. This is the 'common course' leading to course and subject choice at age 14.

S3
S4 The student has 3 choices. Minimum leaving age: 16

(1) SCE - Options: Continue on to S5

(2) CSE - Options: Attend a vocational training school part-time and complete an apprenticeship in conjunction with the training or directly enter the workforce

(3) Regional exams- Options: will usually enter the work force or take up an apprenticeship program

S5 Highers

Certificate of 6th year studies - Options:
Entry to higher education
(a) Central Institutions
(b) College of Education
(c) University

difficult. The Scottish Certificate of Education is designed for the top thirty to forty percent of pupils. The C.S.E. is a lower level exam for those students who are more interested in the vocational fields. There are also non-certificate courses for those students who are unable to complete the C.S.E. or the S.C.E.; these non-certificate courses have regional examinations. Figure 4 illustrates the variety of courses available to students doing C.S.E.'s and S.C.E.'s in their third year. This is a sample of a subject option choice sheet from Dyce Academy, a high school located on the outskirts of Aberdeen. Students doing German and Latin travel to a neighbouring school. This is a curriculum link which has evolved in the past year. Students from Bankhead may travel to Dyce to complete a course.

In 1972 the school leaving age was raised to 16; it was thought that the extra year of studies would better prepare students academically and socially to make decisions concerning their future career choices. Students completing C.S.E.'s usually finish at sixteen and go directly into the work force or attend a vocational further education college part-time, full-time or evenings only. Students attending part-time will usually work a number of days per week as an apprentice and study part-time. Others may work full-time or complete a vocational course at night.

Those students passing their S.C.E. grades at the end of their fourth year usually go on to the 5th year which is referred to as "highers". The higher grade examination is

Figure 4

Dyce Academy S3 Subject Options 1982-83

English and Math are compulsory. Students must also select at least one subject from each of the six columns.

1	2	3	4	5	6
English 0 English CSE		English 0 English CSE		English 0 English CSE	
	Maths 1 0 Maths 2 CSE Maths 3 CSE		Maths 1 0 Maths 2 CSE Maths 3 CSE		Maths 1 0 Maths 2 CSE Maths 3 CSE
Physics 0 General Science CSE Chemistry 0	Biology 0 General Science CSE Chemistry 0	Physics 0	Chemistry 0 Biology 0 Modern Studies 0	Chemistry 0 Physics 0	Biology 0
History 0	Geography 0		Social Studies CSE	Modern Studies 0	History 0
Woodwork 0	Integrated Craft CSE	Technical Drawing 0 Woodwork 0	Engineering Science 0 Metal Work 0	Technical Drawing 0	Metal Work 0 Technical Drawing 0
Secretarial Studies 0	Office Studies CSE	Secretarial Studies 0 Accounts 0	Secretarial Studies 0	Office Studies CSE	Economics
Child Development CSE	Child Development CSE	Cookery CSE	Cookery CSE	Food and Nutrition 0	
Theatre Arts CSE	Religious Studies 0				
	Art 0	Art CSE			Art CSE Art 0
Spanish 0	German 0 (Bankhead)	French CSE French 0		French 0 Latin 0 (Bankhead)	French 0
			Music 0		Music CSE

the basic qualifications for entry to higher education or to professional training in Scotland. The certificate of sixth year studies was introduced in 1968. It is taken only by those students going to central institutions and universities. The sixth year is very research-oriented and usually involves a substantial piece of individual work, such as a project or dissertation (Scottish Education Department, n.d.).

Each comprehensive school in Scotland has a fair amount of autonomy in respect to the mode of teaching and the school philosophy. Some comprehensive schools follow individual approach to teaching, while others are still very traditional. The pupil-teacher ratio, however, is the same for all types with the ratio in 1980 being 14.4. With classes of this size, it is easier for the teachers to spend time with their students individually, whatever the teaching methods. All of the secondary schools are still quite dominated by a cognitive learning style due mainly to the exams which the students have to write at the end of their fourth year (Taylor, 1982).

Shetland and Orkney Differences and Similarities

Primary education on the Shetland and Orkney Islands is very much the same as that for the Scottish mainland. It varies only to the extent that any philosophy will vary when individuals are separated by geographical boundaries. There is one major difference, however, in the structure of secondary education. Both Shetland and Orkney have junior

high school systems. All pupils attend their local secondary schools for the first two years of their courses. All these schools offer a two-year common course which establishes a foundation of learning from which to base subsequent progress.

Towards the end of the second year, decisions have to be made by school, pupils and parents as to the course to be pursued in the third and subsequent years. The pattern which exists is that students who are contemplating an academic type course, resulting in six to eight "O" grade subjects, would move to a high school where they would, in most cases, board for five day periods. Only those students living in the major towns of Shetland and Orkney get to return home at night. This system is necessary because of the remoteness of some of these communities. It is not thought to be economically feasible to have secondary schools in every community where there are primary schools.

The S.C.E. examinations written by the Shetland and Orkney students are the same as those for the rest of Scotland. The only real difference is that the Island authorities do not offer the Certificate of Secondary Education Examinations (C.S.E.).

This chapter has attempted to outline the demographic and geographic characteristics of Scotland which form a social-physical environment for development in that country. In Scotland, as in any other society of the western world, there are complex interconnections between rapid economic

development and the traditional institutions of the society. The present focus on oil development and the educational process in Scotland is presented in detail in the forthcoming chapter.

CHAPTER 3

THE SCOTTISH EXPERIENCE

In focusing on the Scottish experience, this chapter follows the outline presented in the areas of investigation of this research. To set the stage for presenting the findings in each of these areas, it is appropriate to give a brief overview of the discovery and exploration phases of offshore oil and gas in the North Sea.

Description of the Exploration Stages

Offshore exploration in the North Sea began in the mid 1960's. The first discovery was the Montrose field in the United Kingdom sector, in September of 1969. In December of that year the more significant Ekofisk field was discovered in the Norweigen sector. Exploration interest consequently moved to the deepest waters of the northern section of the North Sea; Forties was discovered in late 1970; Brent, in 1971; and five other fields in 1973, were discovered in the East Shetland Basin. Several further commercial discoveries were made in various Northern North Sea areas in 1974 and 1975. Exploration activity was reduced in the late 1970's but subsequently increased again following the rise in international oil prices in 1979 (Cockhead, 1981).

MacKay (1981) pointed out

> Economic activity is not spread evenly over geographic space and this manifests itself in Scotland in the different structures and scales of the development generated by North Sea oil and gas ... the experiences are highly concentrated, with noted locational biases, and the inevitable result is that the developments have differing impacts on different parts of the country ... (pp. 5-6).

This occurred during the North Sea development, and can be examined by looking at the employment generated in each of the three regions which absorbed the major impact of the development in the United Kingdom: The Grampian, Shetland and Orkney regions.

In Scotland, over fifty-five percent of oil employment is in the Grampian Region, almost all in the Aberdeen area; this contrasts sharply with the Grampian region's 8.5% share of total employment, 4.7% of the Scottish unemployed and 9.0% of the Scottish population. The Shetland Islands, as of 1981, had a total population of about 28,000 of which 8,800 were employed in oil related work. The Orkneys had a total population of about 20,000, of which 500 people were in oil related jobs (MacKay, 1981).

The availability of employment in these areas led to important population changes. The Grampian region population trends dramatically reversed over the last decade, in contrast to a slowly dwindling population throughout the post war years. The population of Grampian grew by 30,000 during the 1970's to a level of 469,000. In other words, during this period the Grampian experienced greater population growth than any other Scottish region and significantly

greater growth than the other city based regions (Grampian Regional Council, 1980). The population of Aberdeen, over the past ten years, increased by 21,800 to an estimated total of 227,000 at the end of 1980 (Cockhead, 1981). The population of the Shetland Islands increased from 17,327 in 1971 to 22,560 in 1980 (Shetland Islands Council, 1981). Orkney also had an increase, with the 1973 population being 17,000 and 1982 approaching the 20,000 point (Bain, 1982).

The increased prosperity and job opportunities in these areas, combined with the influx of significant numbers of highly paid people, resulted, not surprisingly, in socio-demographic changes, thereby giving rise to a more cosmopolitan population. For example, there was a significant increase in the foreign born population so that now an estimated 4,000 Americans reside in Aberdeen. Such population changes presented the school system with the obvious need to accommodate quantitative increases, and the less visible requirement of accommodating the diverse socio-economic cultural backgrounds of students represented in the school. The consequences of these changes are discussed in the present analysis of four aspects of education: administrative planning, learning climate, teacher supply, and vocational development.

Administrative Planning

The population movements and increases which have been described have had repercussions for the administrative planners in the Grampian, Shetland and Orkney regions of Scotland. Aberdeen, the city most affected by the development of offshore oil has had a population increase of approximately 34,000. The new housing requirements generated by the oil industry have been met by the development of suburban satellite communities (Michie, 1980). Fordyce, the deputy director of education for the Grampian region, indicated that new housing subdivisions had been planned by the Grampian Regional Council to be built over a ten to fifteen year period. With the impact of the North Sea development, planning had to be moved ahead by five to six years to provide housing for the families moving in. Fordyce stated, "educators have a bad habit of not recognizing problems on the horizon; at the beginning the education department did not plan for oil development, problems have piled up and now we're scrambling to try and solve them" (Fordyce, 1982). The deputy director suggested that new schools simply weren't built until overcrowding was evident in the existing facilities. Michie (1980), the director of education for the Grampian region, wrote that

> Central Government had to agree to allow the Grampian Regional Council to borrow exceptionally to provide schools for the incoming populations; also the architects have had to design standard primary and standard high schools which were capable of immediate expansion. (p. 2)

The deputy-director suggested that with "people on the move" and administrators attempting to serve such a mobile population, a number of problems have occurred. Firstly, the Grampian education council built their new schools too small; expansion was often necessary to accommodate increased numbers of students. Now, however, five and six years later, there is extra space again. An example Fordyce gave was a new primary school which was built for approximately three hundred students. Over a three year period extra teaching units had to be added because the enrollment increased to four hundred. At the time of this study, 1982, there were only two hundred and fifty students at that school.

Secondly, administrators have had to deal with the problem of the movement of families from the inner city to the newer houses in the suburban satellite communities. Michie (1980) elaborated on this point:

> The net effect of such movement or migration has been to depopulate long established primary and secondary schools with the result that the Grampian Region Education Authority is now facing the very difficult problem of having to close under-used schools and amalgamate them with others which have an assured future for a long time to come. (p. 2)

A third problem with which the administrators in the Grampian region had to cope was the higher cost of both new school construction and land for the new schools. These problems resulted from an overall increase in the cost of living in the Grampian area and resulted in schools having to be built on a higher cost limit, thus reducing the square

metreage of accommodation available for given numbers of pupils (Fordyce, 1982; Michie, 1980). It can be concluded from this information that the standards for school construction had to be reconsidered in light of the higher inflation rates experienced in recent years.

Planning for education in the Grampian region has improved over the past ten years and the education department now works very closely with the Grampian planning department to predict the levels and locations of population movements in order to respond appropriately in terms of new school construction. The education council has worked out an estimating system for predicting the likely number of students they will have attending a particular school. This estimating system assumes 1.5 school children per household. This figure does not apply to new households which are assumed to produce 1.7 for an initial period. The council predicts 1.2 children per household for the secondary schools. These figures, of course, are not always accurate since people often do unpredictable things. This system does, however, provide some foundation for predicting the number of students that are going to be attending particular schools.

Despite the large influx of new students, the administrative planners for the Grampian Regional Council have done a good job of physically accommodating the students in their jurisdiction. However, there might have been more severe problems if the Americans, Dutch and French had not organized their own schools. The main reason for the

organization of these schools was the major differences which existed in the syllabi of the educational systems in different countries. It was felt by the nationals involved to be undesirable to attempt to integrate those students who would not be staying in the Aberdeen area for long periods of time. The American school had an enrolment of five hundred in 1980; this number would have obviously added significantly to the population of the overcrowded Aberdeen schools. The local authorities helped the oil firms establish these schools and offered advice on leasing of buildings and assistance by way of facilities, furniture and equipment. They did not, however, offer financial assistance.

Opinions vary among administrators in the Grampian region as to the "effects" of offshore oil development on the educational system. The director of education, Michie (1980) indicated that "the oil companies and their oil related enterprises have brought both educational challenges and advantages" (p. 3). Some of the advantages related to vocational development will be discussed in a later section. The deputy director of education stated, "as far as educational planning goes, oil development has been one big problem ..." (Fordyce, 1982). The contrast in the two statements may be explained in part by the fact that the deputy director is more immediately responsible for dealing with the day to day operations of the educational system, and the problems which population movements have

generated.

The Shetland and Orkney Islands

Graham (1981) wrote that "the years 1971 to 1981 have been the most tumultuous decade in Shetlands history" (p. 13). Shetland's population over this ten year period increased by fifty-four percent. This compares to a decreasing population trend which existed since 1841 (Birk & Sewel, 1979). Accompanied by this population increase was the need to accommodate many new students into the Shetland schools. The educational budget of just over £1½ million in 1971 rose to £15 million in 1981 (Barnes, 1982). While many areas of Scotland were experiencing educational cutbacks and declining enrolments, the North Sea oil development enabled Shetland to obtain support for the construction of a number of new schools.

In Delting, the parish which includes the Sullom Voe Terminal, two primary schools were built at Brae and Mossbank. During 1977-78 the population at Brae doubled, the school was built for 175 students but reached an enrolment of 280 at one period. This overcrowding occurred until the Mossbank school was built. Graham (1981) indicated, "the growth of Lerwick necessitated a second primary school at Sound, with accommodation for 360 students" (p. 14). Three other primary schools were also built, as well as an extension added to Dunrossness primary to accommodate the population boom associated with the expansion of Sumburgh

airport.

Brae junior high was not able to adequately meet the needs of an increased population. A new school was built which was designed to teach S1 through S4 to alleviate some of the similar pressures placed on the Anderson high school (Leask, 1982).

The director of education for the Shetland Island Council felt the most difficult problem the Council faced in planning was attempting to get some estimates of the numbers of people the oil companies would be bringing in. The companies were reluctant to suggest estimates due to the many factors which can decrease or increase growth so quickly. Unfavorable economic conditions, offshore licensing and application of regulations are examples of these factors. An additional and unpredictable factor was the migrants who came, independent of any company, to Shetland hoping to obtain work (Barnes, 1982).

Anderson, a headmaster in a Shetland school which did not experience the impact of "oil children", commented on the people who came to Shetland having nothing to do with an oil company or any other aspect of the development, but who came because Shetland was prominent in the public eye due to media attention. He elaborated further on this problem:

> Those people were looking for an alternative life-style; they settled in the most ridiculous isolated places. I say ridiculous because they had no skill living on the tiny islands where they settled. With our climate, not even people with generations of experience can do that. (Anderson, 1982)

The headmaster felt those families brought some very odd psychological problems with them and tended to be a burden for the educational planners since they usually had large families and located in areas with limited educational resources.

Alexander Bain, director of education for the Orkney Islands, pointed out that Orkney also attracted families whose reasons for coming to the islands were not related to the oil industry. He described the following example:

> A family came in from I know not where. They had some kind of crofting background because they brought with them cows, goats, and dogs. There were fifteen children in that family; they came to the Ferry on the Scottish side and milked one of the cows to feed the children. Since this family was going to a little island, they added significantly to the population of the local primary school. This happens a lot. (Bain, 1982)

The Director believes that those people would not have come to the Orkney Islands if the oil discoveries had not given the Islands publicity.

Since the terminal built at Flotta, Orkney, was on a much smaller scale than that of Sullom Voe, the numbers associated with it weren't great enough to cause a great overcrowding in the schools. The biggest problem administrators in the Orkney Islands had to deal with was the pressure from incoming parents to have city facilities on small islands. This problem will be discussed in the Learning Climate section.

The administrators, headmasters and teachers interviewed in the Shetland and Orkney Islands felt the oil

development had been a good thing since the positive aspects far outway the negative. Graham (1981) summed up their opinions:

> ...Looking at it from the perspective of the school I would say that on the negative side the community is paying the penalty of affluence, through a dip in general standards of behavior, and a slight but significant slackening of the influence of the home--due largely to the greatly increased number of families with both parents working. On the positive side there is, apart from the greatly enhanced career prospects, a new confidence and a wider vision. Oil has sent a surge of energy through Shetland and the reverberations have shaken the foundation of local society, with a new industry, new people and new aspirations all making their various impacts ... (p. 15)

Learning Climate

Learning climate as used in the present context is an all encompassing term in that it includes all those factors which affect the ability of the school system to accommodate the needs of an heterogeneous student population. The idea of accommodation has received considerable attention from social scientists with particular attention often given to social and psychological adjustments. Focusing more specifically on the process of accommodation in education, there are definite and established interrelationships between the academic accomplishments of students and their social and psychological adjustment. This is why learning climate is such an important issue.

In the Grampian, Shetland and Orkney regions of Scotland,

the philosophy and methods of accommodation varies from school to school. Despite the differences in method, however, it is an issue with which many headmasters and teachers have had to deal since the beginning of different types of development in their areas.

Incomer Accommodation

The Brae primary and junior high schools were the most directly affected by the development in Shetland since the community of Brae is in the closest proximity to the Sullom Voe Terminal. During the school year, 1977-78, the school population doubled. Many of the students who arrived that year were the children of the parents who were initially working on the construction of Sullom Voe. The headmaster at the time, Oliver Leask, observed that the biggest single factor common to the majority of all these children was their previously disrupted educational backgrounds.

The teachers and headmasters have observed that academic accommodation was often difficult because these children seemed to lack a great deal of basic knowledge considered necessary for adjustment into the curriculum of the school. The seriousness of this problem can be illustrated by a description which was given of a particular student who arrived at the school during this time. The student was fifteen years old and had attended sixteen different schools before Brae. The headmaster suggested that this pupil did not have a home base and that just when friendships

were being developed, he was always torn away, leaving him with no sense of cultural belonging. His education had been very disrupted and segmented from having attended schools in so many different places, making it very difficult for him to be academically accommodated. The headmaster, Leask, also noted that a number of the children who arrived during the construction of Sullom Voe had lived in many different parts of the world as their fathers' expertise took them to major construction jobs. He indicated that this often resulted in disrupted educational backgrounds. Some of these students, Leask noted, did have emotional problems. He indicated, however, that he was reluctant to call in the Educational Psychologist for fear of the new students being identified by the other children as having emotional problems. The remedial teachers, he added, usually were able to satisfactorily deal with these students on their own. The headmaster recalled that the incomers settled in very well once they realized someone was interested in them (Leask, 1982).

A consultant in American education in Scotland, Brehm (1977), suggested that children who were on the move a great deal and knew they were not going to be at a location for any more than two years did not attempt to make friends or to get to know their teachers. Brehm (1977) also made reference to the differences between the various categories of oil personnel and how these differences resulted in different standards in the academic background

of their children. "This was reflected," she noted, "in their children, whose interests were heavily weighted towards sports and mechanical aptitudes rather than academic interests" (p. 11). She said that the production people tended to have a more academic background and that this, too, was noticeable in their children. The consultant felt that these children seemed a little easier to place and performed better in their work (Brehm, 1977). Brae's headmaster also alluded to the point commented on by the American consultant. He felt the children of the management staff were better adjusted academically than those of the construction crews. These, however, were not Americans since the majority of the Shetland immigrants are from other parts of the United Kingdom.

The director of education for the Shetland Islands suggested that some of the adjustment problems were brought about by drastic changes in the environment of the children. "A child" stated the director, "used to living in a city, now finds himself in the back of beyond, where there may be no facilities other than the school itself and a small shop" (Barnes, 1982). A change in environment, he concluded, combined with a different language dialect, tended to confuse communications. Barnes also commented on the social problems which may result when families are constantly on the move. The director felt many of the people who came to Shetland brought problems with them. They may have attended their last school for only nine months to a year and a half;

this again raised the problem of longterm friendships not having been given time for development and the resulting impact on the psychological development of a child or young adolescent.

The director of education for the Orkney Islands indicated there were more children from broken homes among the incomers in comparison to the Orkanian student population. They also had a higher percentage of delinquents and truants. "In a relatively law abiding place such as Orkney," Bain suggested, "these children stand out" (Baine, 1982). The headmaster remarked that with the aid of the social work department they've coped very well with these students. He noted, however, they often had to be told to conform or they would not have been allowed to use available school and community facilities. Bain pointed out that Orkney has been a place that has assimilated outside populations over the ages since the Vikings. During the two world wars there were up to five thousand service men there. The remains of these people and their families are still at Orkney. The headmaster concluded that the population has benefitted from their presence since it maintains stability in an area where population outmigration among the young people is the norm (Bain, 1982).

Anderson High School, located at Lerwick in the Shetland Islands, also had a big influx of new students. From 1972 to 1977 the school experienced a twenty-five percent increase in enrolment. The school population is now made up of English,

Welsh, and Scottish students. The headmaster suggested that integration of students into Anderson High School can go quite smoothly but much depends on where the students are in their academic career. He considered the point of entry a crucial factor, although in the first two years of secondary schools it is not all that vital since everyone does a common course where the basic foundations are being laid. Jamieson then said, however, that once a student comes into class three, it is almost essential to start the course at the beginning. "Students arriving in the middle of S3 are going to be lost," in the headmaster's opinion, "especially if they're from outside Scotland" (Jamieson, 1982). Even coming from Scotland can cause problems, depending on the size of the previous school, their time-table and the number of courses they were doing before. When students come from England where the syllabus is different and the student enters at the end of class three, this school recommends that the student start again and repeat the year. This obviously imposes a great deal of stress on a student but the professional staff of the school believes that differences between the systems leave little alternative. The headmaster explained that many English parents, after corresponding with him and realizing these differences, had enrolled their secondary school children in boarding schools in England. Some companies have policies in this regard and pay the cost of private schooling (Jamieson, 1982).

These differences in the educational syllabi of the English and Scottish systems lead into the discussion of the American student and the academic accommodative problems they encounter in a traditional Scottish school. An American student entering a Scottish school will have more difficulty adjusting if he enters at grade ten or eleven than if he enters at one of the primary grade levels. The problem becomes even greater if the student is going to be in the Scottish system for only a short time. While the Americans work in a grade basis of K to 12, with the child moving from one grade to another each year, the Scottish system is divided into blocks where the student completes common courses for a two year period in S1 and S2 and a two year block period in S3 and S4 (see figure 3). It is because of the major differences between the two systems that an American school was set up in Aberdeen. The school, according to many of the individuals interviewed, does seem to have many problems. It apparently has been plagued by staffing problems right from the beginning. This high turnover of the teacher force is a cause for concern among the American parents and for this reason many Americans have decided to send their children to Scottish schools when integration is possible and they are expecting a prolonged stay in Scotland.

Brehm (1977), a consultant in American education, expounded further on this accommodation problem. She concluded American children are usually behind the Scottish

in both work and the language arts.

> A bright child from a good school system catches up this leeway but the average child does not ... with the help of the remedial staff it is usually possible to keep these children with their own age group; but, if the child has been moved around a great deal, as is often the case with oil children, it may be necessary to put them back in a younger class... (pp. 11-12)

The differences, the consultant suggested, are even more apparent in the secondary grades. American teachers usually grade pupils on a six or nine week basis and use a letter grade or percent based on a pass mark. "Failing some initial explanation of the Scottish marking system," Brehm (1977) indicated, "the first exam results come as quite a shock" (p. 12).

Westhill Academy is a secondary school located on the outskirts of Aberdeen. The headmaster, Peter Gibson, said that he is unaware of any accommodation problems with foreigners. He stated quite adamantly that he wouldn't know who the foreign students were unless he listened to their accents. Westhill is probably the most progressive school in the Grampian region. Not only has the school been built since oil development but the whole subdivision where it is located is also new. When all students are new to a school, all are foreign to it; therefore, this places those foreign to the country and the local student on a more even level. It is worth noting that the staff was also new and unencumbered by the past.

Dyce Academy, also located on the outskirts of Aberdeen, is another new school which has been built since the oil development. There are pupils at Dyce from about six different cultures. The headmaster, Michael Taylor, suggested there were never integration problems with foreign students. Again, however, this school opened and was made up of foreigners right from the beginning. The style of teaching at both Westhill and Dyce is very individually oriented. This style of teaching and its effects on new students will be explained later in this section.

The psychological and social adjustment of students to a changing environment is included in the broader definition of learning climate. The social work director for the Grampian Regional Council, Mary Hartnoll, indicated that the statistics on referrals from the school have risen only in proportion to the population growth. There is very little evidence to indicate there are more emotional problems. The director concluded that if there are more problems the school personnel must be dealing with them very well themselves. Social attitudes, however, have changed; there are big increases in the divorce rate. Hartnoll does not attribute these changes to oil development since the same trends are being experienced across the United Kingdom (Hartnoll, 1982).

A somewhat different picture emerged in the Shetlands. In a report "Social Implications of Oil Development in Shetland--1980", the director of social work reported that the overall number of referrals to the social work department

had jumped from 289 in 1975 to 1,121 in 1979. This is in comparison to a population increase of 19,159 in 1976 to 21,761 in 1979. The social work service has seen a forty percent increase in professional fieldwork staff since 1975 plus a large capital building programme which has more than doubled the number of residential and day care staff. The director reported clear evidence of a higher demand for social work services from the incoming population. In the south mainland area of Shetland the new arrivals showed a ten percent rate of referral in comparison to a three per cent rate from the native population. It was concluded by the social work director that

> local authority spending of a substantial order will have to be committed to community infrastructure to mitigate the effects of the emergence of an industrial, urban-oriented society developing in a hitherto isolated and sparsely populated rural area (p. 3).

As well as incoming parents having to accommodate to a change in community, some accommodation is also required on the part of the parents to the educational system. A number of headmasters and teachers seem to have had different experiences with immigrant parents. The headmaster of Dyce, Michael Taylor, was assistant headmaster of another school in the initial years of the oil development. He noted a distinct difference in the attitudes of the local Scottish parents and those of the incomers. Traditional Scottish parents hosted an "unthinking" respect for the school and its teachers. He suggested they would never question any

decision the school made pertaining to their children. The first American parents, however, wanted to talk about the programs their children were following. They tended to try and influence the teachers' ideas and were more forward in expressing their opinions. Taylor felt the senior staff was "a bit taken aback at first," but was willing to co-operate with the parents in whatever way possible (Taylor, 1982).

An extensive study entitled "Social Changes in Dunrossness" was conducted by the Department of Social Anthropology from Queen's University of Belfast. It examined a rural district in Shetland, Dunrossness, that attracted a relatively large number of new residents as a result of expansion at Sumburgh Airport. The intent of the researchers was to develop a framework for continuously measuring social change which would enable the Shetland Island Council to monitor social change in other areas in Shetland, and to respond more effectively to social pressures and problems in Dunrossness. The interviewers spent a year living in the community, interviewing both local and incoming individuals. They found that incomers felt it was non-sensical that their high school children should have to board at the Anderson High School instead of attending on a daily basis and returning home at night. They blamed this on the poor roads and the inadequate school bus service. Incomers also felt the Sandwick School was an area of great concern. "Many parents," the researchers

concluded, "thought that the standards of teaching were not adequate, and that there were not enough recreational and sports facilities; moreover the physical facilities of the school were not adequate to cope with the numbers of pupils" (p. 103). Some incomers gave the impression that unless circumstances concerning the junior high school in Dunrossness changed, they would leave Shetland at the first opportunity. The researchers suggested that Shetlanders, as well as incomers, expressed dissatisfaction with the school. The report recommended a new school be built at Sandwick (Bryon & Macfarlane, 1980). This recommendation was accepted and a new school was approved by the Shetland Islands Council (Graham, 1981).

The director of education for the Orkney Islands indicated there had been problems with some of the incomers. Children living on the very small islands do not have their own high schools because the population has been too small to support them. The secondary school students living on these islands attend boarding school at the larger centers and return home on the weekends. The incomers, most of whom came from cities, felt that this was an imposition. They thought there should be secondary schools everywhere, irrespective of the population. Many meetings were held between the educational officials and the parents. The director suggested that many parents have come to live with the arrangement even though they have never fully accepted the system.

The Orkney educational director also commented on problems which arose when the migrants' environments were drastically changed from that of a city to one of a small island where many facilities were not easily attainable and the way of life was in sharp contrast to the more urbanized centers of Scotland. Adaptation was necessary on the part of both the migrant parents and children.

The headmaster of Brae's primary and junior high schools commented that parents who moved in to Shetland were responsible individuals who did their best to help their children adjust to the new community. The teaching staff apparently found these parents very cooperative; there was never pressure from migrant parents to add anything to, or drop anything from, the traditional curriculum. This is in contrast to the opinions expressed by the Dunrossness investigation.

Graham (1981) implied that the migrant parents showed a great interest in the local history, tradition and speech. "This" he continued, "has stimulated a new interest among Shetland people in their own culture" (p. 14).

With an influx of incomers there also arises the question of language. The deputy director of education for the Grampian region explained that there are presently eighty-one nationalities in the Aberdeen area; not all of these are oil related. A language unit was set up in Aberdeen many years ago to cope with the Chinese, who have been coming to Aberdeen for a long time. The language unit

was therefore established for them and was in operation at the beginning of the oil development. Only a small number of children whose parents were associated with the oil industry could not speak English. The language unit in the past had only one full-time staff person; there are now four full-time. Students unable to speak any English go to the center full time until they are capable of speaking and understanding at least the basic words. Those speaking some English go to the center for half days and attend regular school the other half. This continues until the student is able to comprehend enough of the English language to attend regular classes on a full-time basis. None of the educational personnel interviewed felt language was very much of a problem, although it might have posed greater difficulties if the French and Dutch had not established their own schools. Overall, language was not considered a very major issue in the accommodation process. They did point out, however, that language might create a problem if the children who had difficulty with the English language were scattered over a very large area.

Teacher Accommodation

The accommodation process was also at work with the traditional Scottish teachers who first experienced the new students in their classrooms. Michael Taylor (1982) discussed how individual classroom teachers reacted to the first group of foreign children who arrived at the Aberdeen

schools. Teachers had longstanding relationships with their Scottish students; therefore the first groups of foreign children had to conform and adjust to the rest of the class. Taylor felt teachers in those days liked to pretend they were teaching a homogeneous group. An American or an English student who spoke out was put in his place. Now, however, with fifty percent of some classes being foreign, and with the philosophy of educators leaning more toward individual teaching and classroom discussion, those attitudes have changed. "An older teacher," the headmaster commented, "will tell you students today are more presumptuous. Whether this is a sign of the times or the influence of other cultures is unknown" (Taylor, 1982). He suspected it is a combination of both which have brought change in the relationship between teacher and pupil.

The acceptance of the foreign students by the Scottish teachers often depended on whether teachers liked having students in their classes who expressed their opinions. The Scottish teachers either promoted this idea and used it as a method to encourage the Scottish student to be more vocal, or they felt it was undesirable, and a behavior which was to be discouraged.

"Children's rights," Taylor remarked, "would not have been thought about fifteen years ago; they are today. This is definitely due to American influence, but probably more so through American educational writers than through the oil development" (Taylor, 1982).

Local Student Accommodation

Another area to be examined when discussing the Learning Climate is the changes in the original local students which may have taken place. During the expansion of the Sumburgh Airport and the influx of new students in the Sandwick primary school, the director of education reported that all trace of Shetland accent had disappeared from the speech of the local students. In the primary school during this time, up to seventy percent of the student body was incomers. This was the opposite effect from the past when a minister or doctor would bring his family into Shetland. A local teacher remarked how the incomers would pick up the Shetland accent very quickly. Graham (1981) alluded to a change in dialect among the local students at Brae school. "The dialect dwindled," Graham stated. "Despite the concern of parents that the dialect was being eroded there was never any question of tension between locals and incomers" (p. 14). It is interesting to note, however, that a number of teachers produced a series of booklets for use in the Shetland schools: a collection of Shetland verses, an Anthology of Folk Tales, and a History of Shetland during the last century. Graham (1981) remarked "that when a culture comes under threat, they become more acutely aware of its value" (p. 14).

The headmaster of Anderson High School noted a change in the Shetland students' attitude toward money and possessions. During the construction of the Sullom Voe Terminal, the brothers and sisters of the Anderson students

were working at Sullom Voe and earning quite large sums of money. School leavers at sixteen, the headmaster commented, were earning more than a headmaster. He indicated that this has naturally affected the attitudes of the students. The teachers were staggered by the things students carried around with them. "A £200 radio-tape deck cassette recorder ... the kind of money they pull out of their pocket ... their spending money per week seems to be as much as 30 pounds ..." (Jamieson, 1982).

The headmaster of Dyce commented on the enrichment of a class when there are a combination of a number of different cultures. He felt the local Scottish students were getting first hand knowledge of other cultures. "This," stated Taylor, "can only modify their views and increase their tolerance of other people" (Taylor, 1982). The enrichment which the headmaster discussed was also spoken of generally by other teachers. Those interviewed agreed; having a variety of students in a class from different countries can add a great deal, for example, to a geography class in which a particular country is being studied. If a child from that country is present, he can describe the customs and other characteristics of his homeland. This type of exposure is experienced in other classes and the teachers felt that it enriches the learning climate of the local student. The author visited Cults, a primary school in Aberdeen, and spent time talking to the students in their classes. The multi-cultural groups which made up the

classes were very obvious to an observer.[2] The students were very aware of the background of their classmates. They could tell the author where the members of the class were from and something about the countries represented by the group. It was certainly an enlightening experience.

It is difficult to summarize this portion of the investigation. It is apparent that accommodation to the new school population was required. However, the nature of the required accommodations seemed to be governed by the specific context. In addition, there appeared to be some inconsistency in the opinions expressed, and it is important to bear in mind that saying there were no problems is not the same as saying that change was not required and that change did not take place.

The effects of the North Sea oil development, as demonstrated in this section, have resulted in changes in the learning climate of the Scottish Education system in the areas studied.

There are two basic approaches to accommodation in the schools studied which have evolved to meet the needs of the changing population. These two approaches may be seen in the traditional Scottish school such as Anderson High in Shetland, and contrasted with Dyce Academy in the Grampian Region, which has been built since the oil development. A description of each of these schools will be given and their methods of accommodation will be explained.

Dyce Academy

Dyce Academy is a new secondary school which opened in August, 1980. Pupils are drawn from the village of Dyce, on the outskirts of Aberdeen, from the rural area around Dyce, and from the villages of Fintray and Newmachan. The pupil enrolment in the 1982-83 session is approximately 800, made up of 180 pupils in S1, 160 in S2, 200 in S3, 160 in S4, and 80 in S5.

The headmaster of Dyce Academy, Michael Taylor, has guided the teaching at his school along an individually oriented approach. Everyone, as much as possible, works at his own speed. A pupil moving in can be offered mini-courses within the class to help him catch up to the material he may have missed due to his move.

Every student, when they arrive at Dyce, is appointed a guidance teacher. That teacher is assigned to the student for his or her duration at the school. The guidance teacher's main job is to get to know the student and act as an advisor when needed. Members of the same family usually have the same guidance teacher so that the parents and teacher can get to know each other well.

In the first two years at the Academy, students are in mixed ability classes. English, maths, French and social subjects are taught in pairs of classes where there are three teachers. The aim of this method of allocating three teachers to only two classes is to provide more opportunity for group or individual work. The additional teacher is

ideally placed to serve, at times, the needs of the whole class by extending to groups of pupils within the class more advanced material and by helping those who require further practice in work already covered.

At the end of S2, students, with the help of their guidance teacher and parents, choose the courses they would like to complete in S3 and S4. Dyce Academy offers both the Scottish Certificate of Education and the Certificate of Scottish Education. Regional exams are also offered for students unable to complete either of the above. There is, as well, a remedial department at the school for those who need extra help above and beyond that which is received in the regular class.

The method of accommodation at Dyce Academy is clearly one of remediation where a new student is assisted in the adjustment process through mini-courses and remedial help. It is much easier to understand why the headmaster, Michael Taylor, felt academic accommodation has not been a problem at his school when one examines the mechanisms which are in place to aid incoming students in adjusting to their new school (Dyce Academy Publication, 1982).

Anderson High

Anderson High is located at Lerwick, Shetland. It is a comprehensive high school with accommodation for one thousand pupils. The school is a combined junior and secondary school, since it takes in students from the Lerwick area for S1 and

S2 and also the S3 students from the seven junior high schools in the Shetland region.

In the first two years, all students in S1 follow a common course made up of the following subjects: English, mathematics, history, geography, French, German, science, art, home economics, technical subjects, navigation, music, physical education and religious education. During S2, pupils who have shown ability in a foreign language may choose Latin as an additional subject. After two years, when the common course has been completed, parents and teachers help the student decide what courses are best suited for him. Anderson High does not offer courses in the Certificate of Scottish Education. The students therefore decide to take "O" grades for the Scottish Certification of Education or take regional courses with a strong practical content. These contain practical experience of actual work situations that will serve as an introduction to some of the jobs which may be available when they leave school. Remediation is not of major importance at Anderson High since the slower students from the seven junior high schools stay back and complete courses there. New students arriving at this school then are accommodated through a placement process. If the student does not arrive at the beginning of S3 as Jamieson described, it is very difficult academically to accommodate them. The headmaster explained that students who arrive at the end of S3 from another school outside Scotland are usually asked to repeat the

year to make up the difference in the Scottish and English syllabi (Anderson high school publication, 1982).

Teacher Supply

Scotland, like many countries in the western world, is suffering from declining enrolment in the schools, due mostly to a decline in the birthrate. In the past, there were many opportunities for teacher promotion. A teacher could be promoted from a subject teacher to a department head, assistant headmaster and possibly headmaster of another school. Now, however, there is almost a blockage of the system. Future career patterns are much less clear and some teachers may go unpromoted for all of their teaching career.

Frederick Forrester, the organizing secretary for the Educational Institute of Scotland, Scotland's largest teachers' union, indicated that the areas in Scotland where there are oil developments are exceptions to this trend. From 1980 to 1990, Scotland, as a whole, will have an enrolment decrease of twenty-eight percent. The oil areas will not decrease by any more than two percent. "The prospects for promotion are still fairly good in those regions," Forrester stated, "in comparison to the rest of Scotland where the union spends most of its time fighting off threats of redundancies" (Forrester, 1982).

Forrester suggested the two areas in which there has

always been a shortage of teachers in Scotland are those of business and physics. Those individuals who have completed a business or science degree are usually oriented toward business and science and would prefer to work with industry and commerce rather than teach. The Secretary indicated the shortage of those types of teachers existed years before oil development. The development of North Sea oil, however, did seem to make the shortage more pronounced in the initial years. However, Forrester indicated that, more recently, there seem to be more business and physics teachers; this can probably be accounted for by the recession in the economy.

The Grampian Regional Council employs approximately five thousand teachers. The deputy director of education for Grampian implied that when a council has that many teachers, there will always be some lost for various reasons. "In reality," Fordyce stated, "the Grampian Council lost very few teachers to the oil industry, but when an acute shortage exists (in specialized areas) one or two leaving can seem rather drastic." Those who gave up teaching in the Grampian region to work with the oil industry were art and Science teachers. There were four art teachers who resigned. Apart from an enhanced salary, they were attracted to the work schedule of two weeks on followed by a period of two weeks off when they could spend time working on their personal interest, such as painting and sculpting. The art teachers were employed as instrument

observers and record keepers on the rigs. Five science teachers left the teaching profession to work with industry. Two of the five expressed that their reason for leaving was the frustration brought on by lack of promotion. The increased salary seemed to have been the major attraction for the other three. Most jobs with the oil companies require experience and high qualifications. One of the science teachers who left, for example was a specialist in seismology (Fordyce, 1982).

Barnes, the director of education for the Shetland Island Council, stated that only six teachers, out of a staff of three hundred and fifty, resigned from their teaching positions to work with the oil companies. Three of the six, however, were science specialists. Graham (1981) reported that it took the Council some time to replace them. The loss of these six teachers took place during the construction of the Sullom Voe Terminal. Graham suggested

> other council departments were also losing employees to the oil industry; the council responded by negotiating an agreement which gave all council employees a special Shetland allowance of 803 pounds per annum for the duration of the construction period. (p. 14)

Anderson, a headmaster in Shetland and also the Shetland representative for the Educational Institute of Scotland, stated that

> Most teachers do not have the qualifications to succeed in the oil industry, they would have to go back and start

> training all over again. Teachers were a bit annoyed because they weren't earning as much as the oil men, but there was not much anyone could do about that.
> (Anderson, 1982)

Barnes supported this and concluded that "Other than for specialists, the oil industry was offering very long hours, usually quite a distance from home and very hard work with no security at all" (Barnes, 1982).

The headmaster of Brae primary and junior high schools indicated that there has never been any shortage of teaching staff at his school, not even during the massive school increases during the construction of the Sullom Voe Terminal. The local school authorities hired a number of the wives of the subcontractors, who were qualified teachers. "Even if there hadn't been this source," said Leask, "there still would not have been a teacher shortage, since there were and still are many qualified teachers in Scotland unable to find work" (Leask, 1982). Other teacher union officials indicated that teachers in Scotland are willing to move to find employment, especially when a teacher surplus exists (Lamont, 1982; Miller, 1982).

Jamieson, headmaster of Anderson High in Lerwick, commented that staff were difficult to find in the early 1970's because many qualified teachers did not want to go to a small island. However, at this time there was no shortage of work for teachers elsewhere. "It was for this reason that staff were difficult to attract," the headmaster noted, "not because of a loss of teachers to the oil industry"

(Jamieson, 1982). This problem did not last for very long because of declining enrolments and educational cutbacks in some regions of the Scottish mainland. Teachers were willing to go to Shetland rather than face unemployment.

Alexander Bain, the director of education for the Orkney Region, suggested that out of a teacher force of 360, only three left teaching to work with Occidental, the major oil company operating at Orkney. One teacher took on the public relations position and two became process workers. "In the past," the director elaborated,

> there were problems getting teachers to come to Orkney because of the remoteness. This changed in 1977 because school enrolments all over Scotland were decreasing, with the exception of the oil-affected regions. The government did not decrease the number of students being accepted into the teaching profession; a teacher surplus resulted.
> (Bain, 1982)

The director remarked that Orkney has always had a shortage of physics teachers, but many teachers of biology. The physics graduates, he concluded, tend to have more outlets into industry. Bain suggested one should not attribute the shortage of physics teachers only to the oil industry since the problem has existed for as long as he could remember.

Michie (1980) alluded to the indirect effects that the oil industry has had on teacher recruitment. He felt the higher cost of living and the higher house prices have been a negative factor in attracting specialist teachers to

Aberdeen. The headmaster of the Robert Gordon boys school stated that

> the oil companies cannot be blamed for this problem since it is the local real estate companies who raised the housing prices when they discovered there was going to be a housing shortage. (Allen, 1982)

There is now a program in the Aberdeen area in which teachers can spend a two to three month period working for an oil company (British Petroleum). The company pays their salary during this time; as of June, 1982, four teachers had gone through the program. Its main aim is to give the teachers first hand knowledge of the world of industry. This is obviously valuable information which can be passed on to their students since the teacher is given an opportunity to take part in training courses preparing individuals for the world of work. The teachers who get involved in this program are usually from schools which are a part of the school link system. This will be explained in the following section.

Vocational Development

Career patterns in Scotland vary from region to region largely dependent on the type of industry which may be predominant in the area. Edinburgh, as an example, has a very heavy white collar force, since many of the banks and finance companies are located there. Aberdeen, on the other hand, is an area with a large agricultural and fishing base plus the added oil industry in the last decade.

Information on the post-secondary development of Scotland youth is fragmented and patchy. This is due largely to the fifty-five to sixty percent of the population who do not complete "O" grades or may complete but fail them. Their future career patterns are much less clear than those of the top thirty to forty percent who complete "O" grades and highers. Before continuing it is perhaps necessary to explain the general philosophy of education which seems to exist in Scotland.

Higher education is not something which is taken for granted. It is not expected that a majority of the populace should acquire post-secondary training. Universities are very selective; they are geared for the academic elite. The positions open for students in Scottish universities are limited, therefore much competition exists for those positions. The standards for admission to the technical colleges are also very high, with most programs requiring "O" grades and highers. A Scottish acquaintance of the author's has said that, in Scotland, admission to post-secondary training is a privilege which must be earned.

There doesn't seem to be any stigma attached to school leavers in Scotland since it is generally assumed that not more than thirty to forty percent will pass "O" grades. These percentages, of course, vary from region to region. Shetland, for example, more than any other region of Scotland, is known to have a higher number of students going to post-secondary institutions.

As was explained in Chapter 2, the fifty to sixty percent of students who leave school at sixteen usually go directly into the workforce or become involved in an apprenticeship program. The government has also devised a number of other programs for these school leavers, most of which are still in the experimental stages and presently cannot be considered permanent.

The question arises as to what effects a development of the magnitude of the North Sea has had on the vocational development of Scottish youth.

Forrester, the organizing secretary for the educational Institute of Scotland, suggested that there has been a move toward the technical fields since oil development, but he believes this is seen only in the areas where there has been some type of development. Forrester stated,

> One of the interesting things about oil development in Scotland is how little impact oil has had on the Glasgow area; I don't think your Glasgow youngster is very conscious of the oil industry, they hardly know it exists. (Forrester, 1982)

An important point to bear in mind when examining this issue of offshore development and vocational choices is that there is very little a school leaver at sixteen can do in the oil industry, since, as Fordyce (1982) pointed out, oil companies look for very qualified people. Secondly, there is an age restriction placed on those allowed to go offshore. In the North Sea a person must be eighteen. The only area in which a school leaver can obtain work related to the oil

industry is on a construction site doing manual work. At the beginning of the construction of the Sullum Voe Terminal, fears were expressed among the headmasters and teachers concerning the possibility of potential "O" grade and higher level students leaving school at sixteen to work for the construction companies. Even though the jobs available required very little skill and hard manual work, the salaries offered were quite good. People were needed to clean the camps, for example, and to work in the cafeterias, the type of work which a sixteen year old can do very well. Graham (1981) stated that

> The lure of the big paypacket was strong but, remarkably, relatively few succumbed. The majority of school leavers opted for apprenticeships or courses of training. Nor did the big money draw the fourth year certificate pupils away from school prematurely. In 1974, 1975 and 1976--the heart of the boom--the figures were respectively 57%, 62% and 60%. (p. 15)

These percentages for completion of "O" levels are higher than the national average and consistent with Shetland statistics in the years before and after the construction period.

Jamieson, Anderson's headmaster, remembered a few students who, he said,

> at four o'clock would pile into a bus and work at the construction camps until ten o'clock making beds and cleaning, etc. This inevitably affected their work; it was a small minority, however, not more than twenty or twenty five students. (Jamieson, 1982)

Graham (1981) and Jamieson (1982) both commented on

the opportunity which oil development has opened up for Shetland university graduates to return home to find work. In the past, parents knew that if their children were going to have professional careers, they would not be able to live in Shetland. Those studying to be teachers were the only exception. They usually returned home when work was available. This is possible, though, only because Sullem Voe is a permanent presence in the community. Graham elaborated on this point:

> ... It is ironic that the Shetlander's strong attachment to his native isles and his great respect for education should have been for so long, so often, at cross purposes. The able boy or girl, in gaining college or university qualifications, all too often has had to leave Shetland to pursue his career. This brain drain was inevitable in a community whose main economic activity lay in fishing, crofting and knitwear. Oil development has provided, for the first time, wider opportunities locally for young people with scientific, technical and administrative qualifications. (p. 14)

Michie (1980) described some of the ways in which the oil companies have contributed to the schools. "Many oil firms sponsor enterprises for young scientists, exhibitions for young artists and provide scholarships for young linguists" (p. 4). In cooperation with the headmasters and guidance department, the oil companies have developed educational programmes and teaching packages which Michie (1980) believes are of immense practical value in the field of environmental studies.

A number of schools in the Aberdeen and Shetland regions have become involved in a school link program with

the oil company British Petroleum. The main thrust of this program is to create an awareness among students as to what is happening in industry and to bring industry closer to the educational process. The schools taking part in this program are appointed a link officer. This person is an employee of British Petroleum, but spends a particular portion of his time in the schools talking on subjects such as oil technology, career opportunities and interviewing techniques. The link officer also helps students working on particular projects to obtain the materials needed. Dyce Academy is a school which is involved with the link officer system. The headmaster, Michael Taylor indicated that the school has benefitted greatly by being a part of this program. The students are given an opportunity to become exposed to many career patterns while they are planning their own future. The headmaster of Anderson High also felt the link officer program was a very good thing for his school.

A number of post-secondary institutions in Scotland have made changes in their course selection since the advent of North Sea oil development. The Robert Gordon Institute of Technology in Aberdeen is an example. The principal, Peter Clarke, indicated that for the last eleven years RGIT has constantly sought to participate in appropriate activities related to the offshore developments. Many new courses have been added, including an oil drilling technology option in the Higher National Diploma in Engineering. In 1972-73 RGIT introduced a postgraduate

diploma in offshore engineering courses which was the first offshore engineering course offered in the United Kingdom. The institute introduced a BSc course in Engineering Technology in September 1975 and a BSc Honours was added in 1978. In addition, a wide range of short specialist courses in various aspects of oil drilling and production technology have been added. Clarke indicated that most RGIT activities have benefitted from the heightened industrial, commercial, professional and social activity in Aberdeen and the North-East of Scotland. "In particular," he stated, "qualified students from almost all RGIT courses have employment prospects which are enhanced by this increased activity" (Clarke, 1982).

Students attend RGIT from many regions of the United Kingdom, as well as from other countries. The qualifications needed, therefore, for admittance to a degree program are very high since much competition for positions exists. There are, however, many courses at RGIT associated with the offshore survival center which are open to the general public; these courses usually run for a duration of four to five days.

In conclusion, the Robert Gordon Institute of Technology has offered Scottish youth an opportunity to complete degree programs and become specialists in various areas of offshore oil development. It portrays an example of the enhanced career opportunities which become available to young people

who are willing to complete secondary education and take advantage of an industry developing in their own surroundings.

CHAPTER 4

THE NEWFOUNDLAND AND LABRADOR SETTING

To further explain the complexities of offshore oil and gas on the public education system in this province, it is necessary to provide a brief description of selective components of the Newfoundland and Labrador setting. The setting, for the purpose of this chapter, is divided into three parts: an overview of the demographic features; a brief outline of the Newfoundland education system, with particular reference to the financial organization; and a description of the present environment of two of the four areas of investigation: administrative planning and teacher supply.

Demographic Features

Newfoundland and Labrador, according to the 1981 census, had a population of approximately 567,682. The Avalon Peninsula, which takes in the capital city, St. John's, has approximately 240,000 of that total. Excluding Corner Brook, Newfoundland's only other city, the remaining population is spread over a large geographical area, with many small communities along the coastline. This dispersed settlement pattern and the relatively rural lifestyle of this province suggests that it might be particularly vulnerable to social

changes and disruptions in its way of life if rapid economic development were to take place.

On the surface it would seem that St. John's is a very urbanized centre; when compared to other communities in Newfoundland and Labrador, this is true. If a comparison is made, however, between St. John's and other North American cities, it quickly takes on a ruralist image. St. John's is a seaport, which has developed as a service centre, for the East Coast of Newfoundland in particular. It is the seat of the provincial government. The government, together with the educational institutions (Memorial University, College of Trades and Technology, College of Fisheries and Navigation) may be seen as the city's major industries. St. John's has a minimal industrial base and only in the last decade, with the development of the industrial parks, has there been a growth in the industrial base of the city. The increased number of financial institutions has contributed to this growth. In recent years there has been a simultaneous growth in social, educational and recreational services. The new aquarena, the increased number of restaurants and research institutes such as C-Core and Instrumar are examples. This growth, however, is due, to some extent, to the discovery of the Hibernia oil field. Shrimpton and Storey (1981) suggest that for the period 1981-1991 the total immigration into the St. John's Central Metropolitan Area that will be related to the Hibernia discovery, will be between 1,450 and 3,360. The one factor

to bear in mind when examining these figures is that they do not take into account the movement of transient families who may come to the area seeking employment.

Corner Brook is Newfoundland's second city. It is the service center for the west coast and has an industrial base largely dependent on the pulp and paper industry. A combination of mining, fishing and forestry are the major sources of employment in the remaining rural regions. Traditionally, and to a large extent today, fishing employs more people than any other industry.

A number of towns have grown up around the mining industry, including Buchans, Baie Verte and Labrador City. The mining industry presently, however, is in a state of decline. Many of these mining towns are looking elsewhere for economic survival; some are reverting back to the fishery.

Communities such as Springdale, Lewisporte and Grand Falls are service centers, with a forestry base. The Abitibi-Price pulp and paper mill is located in Grand Falls; many of the workers involved in the logging and sawmill industry live in Lewisporte, Springdale, and other Central Newfoundland communities. Agriculture is also an industry which is evident in the province, but on a very small scale.

There are two major factors common to most rural Newfoundland communities. Firstly, many are single industry dependent, and secondly, there is an importance placed on the family, which has been the core part of the social net-

work in the past. In many rural communities there are few people who are employed on a yearly basis; teaching is sometimes one of the few sources of full time employment. This indicates the seasonality of employment in rural Newfoundland.

Despite the economic problems associated with seasonal employment, there has been a growth in facilities in some parts of rural Newfoundland. In comparison to rural communities in other North American countries, however, Newfoundland still lags far behind. Descrepancies in services are also very evident when comparing St. John's to the rural communities. Differences also exist from community to community. Education is one of those services where inequalities are noticeable. Before describing the present setting of two of the areas of investigation referred to throughout this thesis, a general overview of the structure of education in this province will first be provided.

The Newfoundland Education System: An Overview

Education, at the provincial government level is recognized as a separate department, represented by a minister who is also a member of the legislature. The duties of the minister are subdivided between a deputy minister and three assistant deputy ministers.

The Province of Newfoundland and Labrador has a denominational education system. Under this arrangement,

responsibility for education is shared between the provincial government through the Department of Education and the major christian churches through the Denominational Education Committees (DEC's). There are three Denominational Education Committees: Roman Catholic, the Integrated and Pentecostal.

The legislative rights of the DEC's lie in six broad areas: curriculum development as it relates to religious education, as well as the moral connotations associated with other subject areas; educational policy input directly to the minister, through the general advisory committee; the right to examine all government regulations pertaining to education before they become law; the right to select and appoint school board members, and dissolve school boards and select school board boundaries; the authority to control and distribute capital grant allocations; and finally, the responsibility of recommending to the education certification department the approval of those who enter the teaching profession (Stryde, 1978).

School Boards and Financing

The school board is the local and district authority on education matters. These boards consist of seven or more members, of whom three must be elected. A superintendent is hired by the local school board to run the organizational aspects of primary, elementary and secondary education in a district. The superintendent usually has a number of subject coordinators who are responsible for the implementation of

new text books, as well as inservice training pertaining to their subject area. School boards, overall, are responsible for hiring teachers, providing buildings, assessing students, and implementing instructional materials. In some districts in this province, three school boards may be in operation in the same geographical area. The population of students, therefore, is distributed between the three. There are, then, two or three groups who make the decisions relating to education in most districts.

The Denominational Education Committee also adds another complexity to educational organization in Newfoundland and Labrador. This complexity centers around the allocation of finances. Education is financed through two methods: grants from the provincial government and the collection of a local school tax in some districts of the province. The grants from the provincial government are distributed in two forms, through capital and current expenditures. The capital grants are administered directly by the Denominational Education Committees. The government decides on the amount of money to be given to each committee based on the percentage of the population for which each group is responsible; those percentages are determined by the latest census figures available each year. This method of allocation of financial resources means that the DEC's are responsible for the construction of all schools.

The operating grants are distributed directly to the school boards, based on the number of students in each board.

Local school boards are responsible for the maintenance of their schools, as well as board operating costs.

The second method of obtaining educational revenue, the collection of local taxes, is presently very fragmented and unorganized. There is no provincial taxing system; each local school tax authority has the right to determine the amount to be assessed. This freedom which the school tax authorities have been granted by government leads to disparities from region to region. During the year 1980-81 the provincial grants in total, for both capital and current expenditures, totalled $478,809,300. The amount collected in local taxes totalled $12,804,868. Local taxation is obviously a minimal source of revenue when compared to the amount granted by the government (Newfoundland and Labrador Budget, 1982). The important factor, however, is that the percentage collected by local taxation is not accounted for when provincial grants are being allocated. A school district, therefore, which collects a high percentage of local school tax, is obviously in a better financial position than one which collects very little or none at all. A report published by the Federation of School Boards (1981) indicates that this difference in the amount of local taxes in particular districts often means that one district has more finances for instructional materials than another. The report by the Federation of School Boards and the final Task Force Report on Education (1979) both recommended that the government introduce a uniform method of collecting local taxes.

At present, however, the government has not responded to these recommendations.

The material in the following sections is provided as background information before describing the possible effects of offshore oil development on aspects of the education system to be discussed in Chapter 5.

Administrative Planning

Crocker and Riggs (1979) stated that

> Equality in allocation formulae does not lead to equal provision of services. Differences in costs from district to district mean that some districts are able to provide a much higher level of service, at the same cost per pupil, than are others. (p. 34)

Differences in educational opportunity are obvious in this province when a comparison is made between the urban and rural centers and when schools in the same district are compared.

A recent study, now in the process of publication (Norris, 1983), has found that many Newfoundland educators, from the Department of Education to the classroom, are willing to accept that differences between services offered in rural and urban schools are inevitable and will continue to exist after reorganization, and furthermore, that these differences are acceptable, given a minimum standard in rural schools.

The differences in services described here are noticable

when school buildings, facilities, instructional materials and the course selection are observed. The province has a number of DREE schools which are outfitted with the latest facilities and teaching aids. On the other hand, there are many school boards which have difficulty determining where extra finances are going to come from to repair leaking roofs and provide minor instructional materials.

Many schools in the province do not have proper science laboratories, music, and physical education facilities. These facilities are taken for granted in the more urban centers. A wide gap is evident when examining the curriculum guidelines of the Department of Education and the actual curriculum being taught in some rural schools (Crocker & Riggs, 1979).

Since development for particular aspects of the offshore is being planned for a number of rural areas, the question arises as to what preparations administrative planners are making to assess the effects of demographic changes on education in those areas. Government regulations presently require that each of the companies submitting these development proposals complete a social environment assessment study, explaining the facilities which are already in place, in the particular areas and a description of possible infrastructure expansion which may be needed (Barnes, 1983). The companies completing SEA studies are given a 'terms of reference' devised by government departments. This 'terms of reference' outlines the items which the

government feels should be included in the SEA. Each government department is given an opportunity to assess company proposals and then decide if they want to be included in the 'terms of reference'. If, for example, the Department of Education wishes to have education included in the 'terms of reference' for the Argentia SEA, then the company will examine the educational facilities available in the Placentia area and report back to government in their final report. The end result of this method is that educational administrators, in any area, where there are planned developments, are given the time to plan ahead for possible increases in enrolments. A company which is given approval by government to develop, based on the acceptance of their SEA, also has an indication that government is aware of infrastructural improvements which may need to be improved. There are a number of factors, however, which leave this system open to criticism. These factors will be discussed in the following chapter, describing possible implications of offshore oil development in the area of administrative planning.

Teacher Supply

The secondary high school system in Newfoundland and Labrador is presently experiencing changes in its curriculum structure due to the introduction of the reorganized high school program. Newfoundland is witnessing some major

changes with the addition of an extra grade; the reorganized high school program is intended to add more variety and a wider choice of subjects, thereby having implications for the whole area of teacher supply.

Firstly, extra staff will be needed in the school year 1983-84, to cope with the extra students which will be staying on to complete grade twelve. Secondly, additional specialists in the areas of science, business, law, industrial arts, music, home economics, french, and guidance will be required.

There are varying opinions among educational planners in this province concerning the question of teacher oversupply. In the past five years, the opinion of an alleged surplus has been expressed to the point of discouraging students at Memorial University from enrolling in the Faculty of Education. When the issue of teacher supply is examined more closely, it appears that, at the present time, the problem is one of specialty rather than one of numbers. A study by Klas (1981) indicated that in May (1981) the students enrolled in Bachelor of Arts (Education) programmes (which prepares elementary teachers) showed a high percentage majoring in English, psychology, and social studies. Twenty four point nine percent were enrolled in English and 22.8 percent in psychology. This compares to a .08 percent in biology and percentages for the other sciences being so low they were listed in a category of "other" subject majors. Statistics for the Bachelor of Education (preparing

secondary teachers), in May, 1981, demonstrates this same trend. Twenty-one point one percent enrolled in English, 13.2 in history, 10.3 in geography, 7.6 in biology and only 2.3 in chemistry and biochemistry combined.

Warren (1979) concluded that very few, if any, unemployed teachers in the province had specializations in chemistry, physics, mathematics, pre-school education, kindergarten, business education, the fine arts, guidance, home economics, religion or physical education. There were, on the other hand, an abundance of teachers with English, psychology and social studies backgrounds.

Information also exists which indicates there is a shortage of primary teachers in the province. Crocker and Riggs (1980) suggested that 51 percent of teachers in primary positions do not have primary training. Figures also suggest the same situation is apparent in the field of special education, with only twelve percent of special education teachers having completed a special education diploma.

Pope (1982), in a report to the Integrated Education Committee, presented a number of facts concerning the present teacher supply situation. Despite declining enrolments, a total of 677 teachers were hired for the 1981-82 school year. This contrasts with a total of 552 graduates from the Faculty of Education in 1981. Thirteen percent of the 677 total were recruited from outside the province. This information is somewhat startling, considering the conventional wisdom which exists relating to the issue of

teacher over-supply, and non-availability of teaching positions. When this thirteen percent is broken down into subject areas, they are as follows: 23 music, 5 art, 9 special education, 7 french immersion, 13 home economics, 3 science, 1 mathematics, 3 industrial arts, 1 physical education, 1 religious education and 20 regular teachers. In other words, school boards apparently are finding it necessary to recruit specialists from outside the province. These are the very areas that the reorganization is intended to expand.

The area of music reflects the largest number of teachers brought into the province; this is understandable considering there have only been thirteen music graduates from Memorial University. The surprising figure in this group is the twenty regular teachers. One must ask why, if there is an over-supply of regular teachers, would twenty have to be brought in from outside the province? There are a number of possible answers to this question. Warren (1979) concluded that "there are relatively few mobile, well-qualified teachers in the province seeking a full-time position, particularly in subject matter specializations and certain geographical regions" (p. 25). Warren (1979) further stated that only 30 percent of the unemployed male teachers were willing to move to other areas of the province, in comparison to 14.7 percent of the women.

Integrating the various information available on teacher supply, a particular image emerges. Firstly, there appears

to be a shortage of specialists in the province in the areas of: special education, music, industrial arts, guidance, home economics, science (particularly physics) and French. Klas (1981) indicated this shortage will exist up to at least 1985 when one considers the areas of study in which the 1981 education students were majoring. There are also reasons to believe this shortage will become even more noticeable in the next number of years with the introduction of the reorganized high school program.

Secondly, even though there appears to be an over-supply of regular teachers, when this group is more closely examined one finds there is very little mobility among them, and where mobility does exist, there seems to be an unwillingness, on the part of those teachers, to move to the more rural regions.

Attracting teachers to rural areas of the province has always been a problem. Specialists are even harder to attract. Considering that more specialists will be required in the urban areas to meet the demands of the grade twelve program, this could possibly mean there will be fewer specialists available for the rural schools, thereby resulting in non-specialists teaching in specialized areas. Whether this situation will add to the inequalities in education which already are evident in the province, is an issue which will need to be assessed.

CHAPTER 5

SUMMARY AND CONCLUSIONS

As was discussed in chapter one, the educational system reflects the society in which it is imbedded. Changes in education are required to match the changes occurring in the society around it. The nature of the particular educational system is one factor which governs the extent to which change occurs. In Scotland, offshore oil development did have impacts on the educational system. They ranged from minor adjustments to gradual changes which evolved over a long period of time. There were also direct effects on the educational system which required immediate responses.

Administrative planning was affected because of the demand placed on the system for the provision of extra classrooms and services. In the area of learning climate, the teaching and classroom environment were required to change to meet the needs of a multi-cultural population. The oil development appeared to have minimal effects on teacher supply; teacher shortages in particular subject areas seemed instead to have been determined by the nature of career patterns. The oil development resulted in few changes in the school retention rate. It did, however, open up new career avenues for those in post-secondary training. The impact of offshore oil development on the educational system, in Scotland, was very localized and

was confined to the regions where population changes occurred.

In the remainder of this chapter, the effects of oil related developments on education in those regions will be summarized and explored to determine what relevance they have for the four components of the Newfoundland education system outlined throughout this thesis.

Administrative Planning

The discussion on administrative planning centers around two topics: administrative functioning and parent pressures.

Administrative Functioning

Offshore oil development stimulated demographic changes and population increases in the Grampian, Shetland and Orkney regions of Scotland. These population changes resulted in accelerated student enrolment in the schools of the affected areas. In both the Grampian and Shetland regions, a significant increase in school construction was necessary. Two factors governed the way in which this impact was dealt with. These were the distribution of finances and the setting up of private schools.

Because of the organization of education in Scotland, the directors of education in the affected areas applied directly to the national government for increased revenues to cover the cost of new construction. In addition to the

normal budget procedure, both the Grampian and Shetland education councils received grants from the national government to construct temporary and permanent classrooms and schools. While there were short-term problems because of the shortage of space, the centralized administrative system made it possible to overcome these difficulties in a reasonable period of time.

Pressures on administrators in the Grampian region were also alleviated by the setting up of private schools by a number of the oil companies. Again, the nature of the Scottish education system helped to facilitate this process since the oil companies had to deal with only one organization, the Grampian education department. Facilities and advice were provided to the oil companies by administrators from the education council.

The situation in Newfoundland is different in terms of expenditures, which are controlled by the Denominational Education Committee. This aspect of the Newfoundland system adds a complexity which did not have to be dealt with in Scotland. A further complication which may result because of the denominations education system will be the problem of being able to predict in advance the breakdown of enrolments in the separate school boards which may be operating in the one area. This requires the allocating of resources to several separate school districts within the same region. The DEC's also have a legislative role in the provision of facilities and it is not clear that they would respond in

the same way as did the Grampian region and provide facilities for companies wanting to operate private schools.

Parent Pressures

Parent pressures in Scotland were related specifically to the Island regions of Shetland and Orkney. These concerns were not with the quality of education but were related to the issue of children having to go to boarding school during the weekdays to complete secondary education. The parents had difficulties in adapting to an unfamiliar routine and this placed pressures on administrative planners. The locals, on the other hand, accepted this routine; it was a part of the local island way of life.

The Newfoundland school system is different in ways that may require parental adjustment, resulting in problems for administrators who deal with parents. The grade bases of K to 12 will be familiar to many parents; when the Newfoundland curriculum is compared to the Scottish, however, it appears very restrictive, even with the introduction of the new curriculum. There is also the issue of inequalities between districts and between schools in the same district. Parents from outside the province will need to adapt to the denominational education system itself. The fact that a child's religion determines the school he attends will be a difference which many parents will have to accept.

The extent of environmental adjustment will depend to some degree on where families come from. While it is

beyond the scope of this thesis to make predictions of this nature, there are a number of aspects of the Scottish experience which may apply. For example, administrators in Scotland found that parents and children associated with the construction companies were not as demanding and did not place the same emphasis on education as did the permanent employees associated with supply and service companies and the terminal management staff. The kind of offshore related activity may not only indicate the type of people who will be hired but also whether or not they will be local or foreign. A permanent offshore industry in a community may have more of an effect on the education system then a temporary construction activity with a temporary workforce. Some types of construction activities may attract more Newfoundlanders then will others. Families from Newfoundland are already adapted to the Newfoundland education system, and could adapt more readily to differences that they find in a local situation. The possibility that a development might be temporary also creates problems for administrators in deciding how best to meet the temporary need for additional resources.

Learning Climate

Learning climate involves multi-facet dimensions of the student and teacher learning process. The heterogeneity of the student population; which migrated to Scotland due to

the development taking place there, had a definite impact on the learning climate. Three types of accommodation took place within the learning climate environment of the Scottish schools. These included incomer, local student and teacher accommodation.

Incomer Accommodation

Incomer accommodation in the Grampian, Shetland and Orkney regions of Scotland was complicated for some students because of language difficulties, curriculum differences and social adjustments. Each of these areas of difficulty will be summarized, making reference, when applicable, to the Newfoundland situation.

Language. The oil industry has a large international management component which seems to move from place to place where major developments occur. In the Grampian region, particularly Aberdeen, many of this management component relocated their families with them to the area. A number of students arrived at the Aberdeen schools who could not speak English. A language unit already in existence was enlarged to accommodate these students. Second language instruction was given and they were gradually integrated into the regular classrooms. Language would have been undoubtedly a much larger problem if the Dutch and French had not established their own schools.

It is again beyond the scope of this thesis to predict

whether or not Newfoundland schools will receive students who canhot speak English. Much is dependent on the type of activity associated with the Hibernia development and where the specialists will come from to manage the development. English as a second language instruction is available only in St. John's, and it is not integrated into the school system as it is in the Grampian region. Newfoundland's geographical distance from Europe may also make it more difficult to employ language teachers. Language could become more of an issue if the students involved are scattered throughout the province in relatively small development sites.

Curriculum differences. The nature of the Scottish curriculum also caused academic accomodation problems for students who came from the United States and other parts of the United Kingdom. These difficulties appeared to be restricted mostly to the secondary schools since few academic accommodation problems were reported among the primary schools. The differences in the syllabii of the English and Scottish schools resulted in some English parents electing to enroll their children in boarding schools in England; the American oil companies chose to organize their own school, providing the American parents with an option. There were, however, many foreign students who did attend Scottish secondary schools. Two methods of accommodation, remedial and placement, evolved in these schools to assist in the accommodation process.

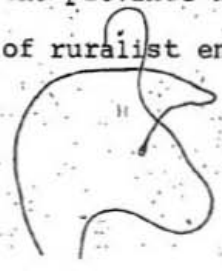
The remedial approach was based on the student being given mini-courses within the regular class to help him or her to make up the materials missed; the remedial teachers in the schools worked closely with those students. The low pupil teacher ratio in the secondary schools probably helped to facilitate the success of this approach. The placement approach was directed more toward determining the most appropriate academic placement, given the present level of achievement of a student. A student who could not be placed academically, due to differences in his previous curricula, was typically given a recommendation by the headmaster to repeat the previous year of Scottish studies since the material covered was usually essential for success. This decision was a very difficult one for both parents and students.

Because of differences between the Newfoundland curriculum and that of other provinces and countries, and even because of differences between Newfoundland schools due to scheduling, similar problems will occur even with the reorganized high school program. The new grade twelve program may even make integration more difficult due to its credit system. It may be anticipated, however, that, because of similarities in the organizational structure of the systems, students moving to Newfoundland from other provinces or the United States will integrate academically more easily than those coming from Scotland or other European countries. In Scotland the remedial and placement approaches evolved

to accommodate these problems. It is difficult to visualize how the remedial approach can be applied in Newfoundland schools, as there is a much higher pupil teacher ratio, and the work of available remedial teachers tends to be dedicated to slow learning students.

Social adjustment. Educators in the Shetland and Orkney Islands found that some incoming students had social adjustment difficulties. This phenomena seems to have been associated more with the children of the construction phase of development. These problems were related to the high amount of mobility among this group and to the drastic change in environments from urban centers to the small islands. The remedial teachers in the schools worked very closely with those students; the problems did not seem insurmountable when it was demonstrated that the teachers were concerned. Social adjustment problems were not reported in the Grampian region. This can probably be explained by Aberdeen's geographical location as part of the Scottish mainland; isolation was not a factor. A wide variety of educational and recreational facilities were also available in comparison to the Islands.

The isolation and rural characteristics of the Scottish islands are also characteristic of Newfoundland, in some respects, including St. John's. Many rural communities in the province have few community facilities. If this type of ruralist environment were partially responsible for social



adjustment problems in Scotland, there is every reason to suppose that incoming students would experience the same problems in Newfoundland. Again, because of the higher pupil teacher ratio and the specialized role of the special education teacher, it will be more difficult to give incoming students the same individual attention which they received in Scotland.

Local Student Accommodation

In the Shetland Islands a number of gradual changes evolved over a period of time in the local student population as a result of the large economic development which took place in the environment. A significant change was noticeable in the Shetland students' attitude toward money. A sense of wastefulness was remarked upon by the teachers; students took less care of personal property. There were also sociological-cultural changes. The Shetland accent virtually disappeared in a number of schools where there were a large number of incomers. The complexity of these types of change makes them less obvious for those who lived through the experience of development. It is quite possible that there were other changes in this cultural realm which were not identifiable to the headmasters and teachers, since it becomes difficult, in retrospect, to determine what changes would have happened naturally and which are a result of oil development. In the Shetlands, this change in student attitude resulted in teachers producing a series of

Shetland booklets, which were introduced into the curriculum.

There was an overwhelming consensus among the teachers interviewed, however, that the local students benefitted greatly from being exposed to students representing many cultural backgrounds. The conclusion was that this exposure increased their knowledge and tolerance of other people while giving them more of a global perspective and awareness.

In Newfoundland many educators, especially teachers, would argue that exposure of other cultures and ideas would be a good thing for Newfoundland students, in particular those in the more rural areas where students have little opportunity, apart from television, to experience the outside world. There is some question, however, as to how educational planners and politicians would view this type of exposure since there seems to be a kind of protectionism surrounding the Newfoundland culture and the so-called Newfoundland way of life. The mandatory course on Newfoundland culture recently added to the high school curriculum by the Department of Education is an example of this.

Teacher Accommodation

Changes in the Scottish teachers' attitudes and teaching style were determined to a large degree by the size and pace of development since these factors defined the influx of students into the schools. In the initial years of the oil development, it was believed that teachers ignored the first foreign students who arrived in their classes and continued

to teach as though to a homogeneous local population. When the ratio of foreign students to local students became larger, it was necessary for teachers to be more accommodative of incomer needs. American students, for example, were more outspoken then their Scottish counterparts, resulting in more classroom discussion.

Newfoundland teachers in the past generally taught students born and raised locally. Their teaching style has evolved to accommodate this population. They may have to change the ways in which they teach in order to accommodate a heterogeneous population, depending, again, on the size and pace of developments which may take place. Recent research conducted in the province has indicated that Newfoundland teachers perceive incoming parents, associated with the oil industry, as being different and somewhat more demanding (Wiseman, 1982). In fact, this is how teachers in Scotland actually found the first parents who arrived, even in the more highly developed Grampian area.

Teacher Supply

At the time of offshore oil development in Scotland, the majority of schools were experiencing declining enrolments and a teacher surplus. This pattern became more noticeable throughout the late seventies, when the only areas in Scotland which did not have declining enrolments were the oil affected regions. In the Grampian, Shetland

and Orkney regions new teachers were being hired to cope with the increased numbers of students enrolling in their schools.

In Newfoundland, there are also declining enrolments. Because of the reorganized high school program, however, new teachers are being hired. The situation is different from that of Scotland at the beginning of their offshore oil development.

The Scottish experience demonstrated that few teachers were lost to the oil industry. Only those who were highly specialized or willing to take semi-skilled jobs left the profession. Headmasters pointed out that a shortage of physics and business teachers had always existed in Scotland, although the shortage seemed more severe in the initial years of the oil development. The important factor appeared to be that students who major in physics and business are usually not interested in becoming teachers and it was possible with the new careers which opened up for science graduates, in the oil industry, that those who were contemplating becoming teachers did not do so.

As well as a shortage of physics teachers in Newfoundland, there is also a shortage of french, home economics, special education, industrial arts, chemistry and primary education teachers. There is also declining enrollments in the Faculty of Education, as well as the unknown impact of offshore oil development in the career planning of potential specialist teachers.

Teachers in Scotland were willing to move to the Islands where jobs were available. Newfoundland unemployed teachers demonstrate less mobility. They may show an even lesser interest in moving to rural areas if the nature of a development, and their own employment is perceived to be of a temporary duration.

A number of conclusions can be drawn from the information compiled in both Scotland and Newfoundland on the subject of teacher supply. Firstly, teacher shortages are a function of teacher careef patterns and will probably have little to do with offshore oil development. Secondly, Newfoundland does not have the specialist teaching force, or the teacher mobility to react to a large influx of students in the same manner as did Scotland. Thirdly, the Scottish experience illustrates that few jobs are available in the oil industry for teachers unless they are highly specialized or willing to undertake extensive retraining. Few teachers in Newfoundland would meet these requirements.

Vocational Development

To summarize the effects of offshore development on vocational development in Scotland and to predict its effects on Newfoundland youth, it is necessary to divide the topic into secondary and post-secondary divisions.

Secondary

Offshore oil development had virtually no impact on the school retention rate in Scotland. While teachers and headmasters in the Shetland schools were concerned that students would leave school to take temporary jobs on the construction sites, this did not happen. The percentages of students going into post-secondary institutions and apprenticeships were consistent with other years before and after the construction period. This clearly demonstrated an ability on the part of the Scottish youth to look ahead at the long-term future. It also indicated competence on the part of the Scottish teachers to portray to the students the importance of long-term rather than short-term vocational plans.

The experience in Scotland, however, took place in a context much different from that in Newfoundland. First, and perhaps most importantly, in rural Scotland, education is highly prized as the way to provide an alternative way of life. Thus, in the Shetlands, approximately sixty percent of all students achieve their 'O' levels, compared to approximately forty percent nationally. In Newfoundland, the opposite trend may be observed. In many rural Newfoundland settlements, very few students matriculate in comparison to the more urban regions.

Second, in Scotland, there is an established cultural pattern which accepts the school as playing a determining role in the career patterns of youth, such that there is no "dropout" problem. This probably explains why so little

change actually occurred in Scotland. In Newfoundland, however, "dropping out" is a problem. There is a conventional wisdom that school is unsuited for some who will become "early" leavers if they perceive legitimate employment opportunity.

Post-Secondary

Indications are that Scottish youth, especially in the oil affected regions, took advantage of the new career avenues opened up to them because of the offshore development and specialized in universities and technical colleges. Shetland university graduates could, for the first time in their history, return home and find employment in technical fields.

Information collected by the author in 1982 indicated that Newfoundland high school youth have a limited knowledge of career opportunities in the oil industry. Many are unaware of how offshore oil development would affect their careers even in the areas of the province where there are proposed developments.

Another factor which may limit Newfoundland youth from taking advantage of offshore oil development, especially in the initial years, is their lack of exposure to the world of work in general. This is very different from Scottish youth who grew up in a very industrialized environment. Even though the Shetland and Orkney Islands cannot be considered industrialized, the youth in those areas were

very sensitized to occupational opportunity. This resulted in very high proportions of students from those areas going on to post-secondary training. In Newfoundland, the opposite is true with more students from urban regions entering post-secondary institutions.

A complex and more controversial point related to vocational development is the present political view of preserving traditional Newfoundland lifestyles. Associated with those traditional lifestyles is a high dropout rate at the high school level and a small percentage of students continuing on to post-secondary training. It will be necessary for the Newfoundland school system to encourage students to look to the future while still protecting the so-called Newfoundland traditions. While the rate, scale and type of production of the Hibernia oil field and other oil discoveries will determine to some extent the potential career opportunities for Newfoundland youth in the oil industry, the fact remains that in order for Newfoundland students to benefit in the long term from offshore oil development, they will need to be educated and qualified. This is in a very real sense inconsistent with the demand to preserve the Newfoundland culture. It will not be possible to limit the sensitization of Newfoundlanders to the opportunities of the oil industry. The very nature of this industry as a multinational, multidisciplinary entity procludes that.

The issue of the impact of an offshore oil industry on

vocational development of students, then, raises several questions for educators. First, how can all Newfoundlanders become better prepared to participate in the development, if they choose to do so? Second, can this preparation take place without seriously threatening the traditional culture and lifestyle of Newfoundland, and third, is it desirable to change the traditional patterns and lifestyles of Newfoundlanders? Finding solutions to questions such as these and their proper implementation will indeed be a challenge for Newfoundland educators.

Recommendations

It is recommended that a study be conducted to investigate accommodation problems of those parents and students who have already moved to the province associated with offshore oil development.

It is recommended that the long-term nature of any offshore related development be carefully studied before permanent school construction is undertaken.

A study of the nature of career education programs required to encourage Newfoundland students to take full advantage of career opportunities associated with the oil industry is recommended. The sociological implications of different career opportunities for Newfoundland youth also need to be examined.

Further investigation is required in the area of

teacher accommodation and the changes which might occur when a student body changes from a homogeneous to a heterogeneous one.

It is recommended that local school districts in areas where there are proposed developments, prepare contingency plans based on the reasonable best and worst-case development scenarios for their districts with respect to meeting demands for space and teaching staffs.

Further study is recommended to develop plans for the integration of new students into the high school curriculum for the following cases.

1. Students who move from other schools within the Province.
2. Students who move from schools outside the Province, but from North America.

Selected References

Allen, George. Headmaster of Robert Gordon's Boys School, Aberdeen, Personal Interview, June 1982.

Anderson, Mr. Shetland teacher and a representative of the Educational Institute of Scotland. Lerwick, Shetland, Personal Interview, June 1982.

Anderson high school publication. Anderson student handbook. Lerwick, Shetland, 1982.

Bain, Alexander. Director of Education for the Orkney Islands Council, Personal Interview, June 1982.

Barnes, David. Department of Environment, Government of Newfoundland and Labrador, Personal Interview, January 1983.

Barnes, R. A. Director of Education for the Shetland Islands Council, Personal Interview, June 1982.

Birk, S., & Sewell, J. Typology of oil-stimulated population movements in Northern Scotland. Implications for the future. Town Planning Review, Vol. 50, 1979, pp. 94-101.

Brehm, M. The American child educated in Scotland. Inspectorate Bulletin, Vol. 51, March 1977, pp. 11-13.

Bryon, B., & MacFarlane, C. Social change in Dunrossness: A Shetland study. North Sea Oil Panel Occasional Paper No. 1, Shetland Islands Council, 1980.

Clarke, Peter. Principal of the Robert Gordon's Institute of Technology, Aberdeen, Personal Interview, June 1982.

Cluett, E. J., & Buffett, F. Report on the conference on declining enrolments: Implications for teachers supply and demand. Faculty of Education, Memorial University, n.d.

Cockhead, P. The impacts of offshore development of oil and gas, Aberdeen: The first 10 years. Presented to a Technical Conference on the Impacts of Offshore Petroleum on the St. John's Urban Region, St. John's, September 1981.

Cockhead, Peter. Assistant Director of Physical Planning for the Grampian Regional Council, Personal Interview, June 1982.

Crocker, R. K., & Riggs, F. T. Improving the quality of education: Challenge and opportunity. Final Report, Task Force on Education. Submitted to Minister of Education, 1979.

Crocker, R. K., & Riggs, F. T. Improving school retention and post-secondary participation. Task Force on Education. Submitted to Minister of Education, 1980.

Dyce Academy Publication, Dyce student handbook. Grampian Region, Scotland, 1982.

Federation of School Boards. School board financing for the 80's. Presented to the provincial government, Province of Newfoundland and Labrador, 1981.

Fordyce, William. Deputy Director of Secondary Education for the Grampian Regional Council, Personal Interview, June 1982.

Forrester, Frederick. Organising Secretary for the Educational Institute of Scotland, Edinburgh, Personal Interview, June, 1982.

Gibbins, R. Prairie Politics and Society. Toronto: Butterworths. 1980. In a paper presentation by J. D. House. Controlling offshore oil: Reality or illusion in Newfoundland and Labrador. Halifax, May 1981.

Gibson, Peter. Headmaster of Westhill Academy, Grampian Region, Personal Interview, June 1982.

Glaser, B. C., & Strauss, A. L. The discovery of grounded theory: Strategies for qualitative research. Chicago: Aldine Publishing Company, 1967.

Government of Newfoundland and Labrador. Newfoundland and Labrador Budget 1982. Presented by the Honourable John Collins at the first session of the thirty-ninth General Assembly of House of Assembly. St. John's, Newfoundland, May 27, 1982.

Graham, J. Shetland schools and the challenge of oil. Inspectorate Bulletin, Vol. 80, December 1981, pp. 13-15.

Grampian Regional Council. Grampian population forecast, summary of the 1980 update. Department of Physical Planning, September 1980.

Hartnoll, Mary. Director of Social Work for the Grampian Regional Council, Personal Interview, June 1982.

House, J. D. Oil and the outports: A tale of two villages. Presented to the Offshore Environment in the 80's Conference. St. John's, Newfoundland, 1980.

Jamieson, George. Headmaster of Anderson High School, Lerwick, Shetland, Personal Interview, June 1982.

Klas, L. D. The question of teacher oversupply: A matter of specialty or a matter of numbers. Newfoundland Teachers' Association Journal, Vol. 70, 1981, pp. 32-41.

Lamont, Mr. Teacher representative for the Scottish Secondary Teachers Association, Edinburgh, Personal Interview, June 1982.

Leask, Oliver. Headmaster of the Brae Junior and Secondary High School, Shetland, Personal Interview, June 1982.

Lidderdale, J. Personal Interview. St. John's, Newfoundland, May 1982.

MacKay, G. A. Impacts of petroleum development on Aberdeen: An overview. Presented to a Technical Conference on the Impacts of Offshore Petroleum on the St. John's Urban Region, St. John's, Newfoundland, September 1981.

Marshall, Elizabeth. Shetland's oil era. Lerwick, Shetland: Shetland Times Ltd., 1981.

Martin, W. B. W. Potential impact of offshore oil development on education at the small community level with particular reference to the teacher in school and community. Prepared for presentation at the 15th Annual Conference of the Atlantic Association of Sociologists and Anthropologists. Sydney, Nova Scotia. March 1981.

Michie, J. Director of Education for the Grampian Regional Council. Correspondence to Jean Brown, Librarian, Newfoundland Teachers' Association, April 2, 1980.

Miller, Donald. General Secretary for the Scottish Secondary Teachers Association, Edinburgh, Personal Interview, June 1982.

Mudie, Ron. Educational Officer for British Petroleum, Edinburgh (also an ex-teacher), Personal Interview, June 1982.

Norris, S. Perceptions of the reorganized high school programme for Newfoundland and Labrador schools. Institute for Educational Research and Development, Memorial University, St. John's, (Unpublished), March 1983.

Pope, T. Teacher recruitment: An assessment of school board difficulties and hirings, 1981-1982. Presented to the Integrated Education Committee, St. John's, February, 1982.

Scarlett, M. Some aspects of the Newfoundland setting for developments of offshore oil/gas resources. In Consequences of Offshore Oil and Gas--Norway, Scotland, and Newfoundland. St. John's: Institute for Social and Economic Research, Memorial University, 1977.

Scottish Development Department. Social implications of oil development. SDD Summary, Aberdeen University Research Report, Scotland, n.d.

Scottish Education Department. The educational system of Scotland. Edinburgh: Her Majesty's Stationary Office at HMSO Press, 1977.

Scottish Education Department. Scottish schools today: A booklet for parents and employers. Printed by the Scottish Information Office for The Scottish Education Department, n.d.

Scottish Education Department. Statistical bulletin. Edinburgh: Prepared by the Government Statistical Service, 1982.

Shetland Islands Council. Social implications of oil developments in Shetland. A report presented by the Social Work Department, Lerwick, Shetland, 1980.

Shetland Islands Council. Shetland in statistics. Scalloway, Shetland: Research and Development Department, 1981.

Shrimpton, M., & Storey, K. Demographic implications of Hibernia. Paper presented to the City of St. John's Canada Mortgage and Housing Corporation Conference, St. John's, September 1981.

Staple, J. The possible effects of an oil boom on education in Newfoundland with specific implications for the N.T.A. Presented to the St. John's Branch of the Newfoundland Teachers' Association, January 1981.

Storey, R. J. Oil and related developments in the highlands and islands of Scotland--features of social impact and policy. In Consequences of Offshore Oil and Gas--Norway, Scotland and Newfoundland. St. John's: Institute of Social and Economic Research, M.U.N., 1977.

Stryde, S. J. The Newfoundland educational system: A brief overview. Department of Educational Administration, Memorial University of Newfoundland, (unpublished), April 1978.

Taylor, Michael. Headmaster of Dyce Academy, Grampian Region, Personal Interview, June 1982.

Thomasson, H. K. Depute General Secretary, The Educational Institute of Scotland. Personal correspondence to Jean Brown, Librarian, Newfoundland Teachers' Association, June 16, 1980.

Warren, P. J. A study of unemployed teachers. Institute for Educational Research and Development. Memorial University, St. John's, 1979.

Wiseman, A. S. Teacher perceptions of the expectations of parents in an oil development environment. M.Ed. Thesis, Memorial University of Newfoundland, October 1982.

APPENDIX A

1. Oil Regulations and Company - Education Relationships

a) Are there government regulations established at any level of government which relate to the responsibility of the industry for education? If so, what was the history?

b) Have there been any agreements negotiated between the industry and a level of government or school authorities relating to education? What was the history?

c) Does the industry follow personnel policy which impact on education? In particular, what are the policies followed regarding hiring of local workers? Movement of families?

i) What proportion of the workforce in various areas are considered permanent? What proportion are local as opposed to workers who move in on a long-term basis?

ii) In the start-up phase in various areas, what proportion of the workforce was imported?

iii) In the start-up phase, what kinds of workers were imported? Were any restrictions placed on the movement of families? How many of the imported workers brought their families? How many families were moved by the industry? Were there differences in supply and service and construction activities

with respect to the movement of families?

iv) Was there a difference between the start-up phase and long-term or permanent operations with respect to the movement of families?

2. Nature of Government - Education Relationships

a) What are the levels of government, local, regional and national; and what are the general responsibilities of each?

b) What are the responsibilities of each governmental level with respect to control of the oil industry?

c) Are there special bodies (e.g., school boards) which have responsibility for governing education?

d) What are the responsibilities of each level of government for education?

i) How is the curriculum controlled? Is there a standard curriculum, or local curriculum with variations from place to place?

ii) Who is responsible for capital expenditure (school construction)?

iii) How are the school programs financed?

iv) Who pays the teachers? Who hires them?

e. What is the role of religion, and denominationalism, in controlling the various aspects of education; curriculum, financing, construction, teachers?

3. Nature of the School System

a) The educational philosophy and basic approaches

i) What is the pervading educational philosophy? Especially, purposes and approaches?

ii) Are there noticeable differences in philosophy in the different regions?

iii) Are there differences in philosophy at different levels of education?

b) Describe the progress of the typical youngster through the educational system. In particular, note differences in the different areas. Are there differences in academic as opposed to vocational routes?

c) What are the schooling patterns for vocational training?

i) When does it begin?

ii) How does a student get into it?

iii) Are there training programs specifically related to the oil industry?

iv) Are there differences in the various areas with respect to vocational training?

d) What proportion of students normally follow academic as opposed to vocational routes? Are there differences between the areas?

e) What is the role of the school in the community?

i) Is it a centre for continuing adult education?

ii) Is it a social centre, or a focus for community projects?

iii) Does it play a role in the religious life of the community?

4. Characteristics of Schools and Curricula

a) In the various schools, what was the nature of the physical plants before any change occurred?

i) What was a typical classroom layout?

ii) Were there special facilities: Gyms, Cafeterias, etc.?

b) What was the typical class size in the various areas?

c) What was the geographic area of the school? Were students bused or otherwise transported?

d) What teaching specialties were on the staffs?

e) Describe the curriculum offered. If possible obtain copies of teaching objectives which explain the expectations and standards at the various age/grade levels.

f) Are there local differences in curricula?

g) Are there local differences in standards and expectations?

5. Teachers

a) In general, what is the professional outlook of teachers, and what is the motivation for teaching? Does this vary from area to area and level to level?

b) How are teachers qualified by training and experience? What are the various amounts of general, specialist, and education training components? Are there variations in the various areas, and at different teaching levels?

c) What are the salary expectations, and how do they compare with others of equivalent education but in different types of work, especially in the oil industry?

d) In general, does the training of teachers suit them to work in other areas than teaching?

e) What is the career pattern of the typical teacher?

i) What public school training is typical?

ii) When do they decide to go into teaching?

iii) Do they move frequently (or infrequently) from area to area?

iv) Do they engage in non-teaching work?

v) Are there differences in the pattern from area to area, subjects taught and so forth?

f) What is the level of teacher supply? In general, are there shortages or over supplies in different areas? Different subjects? Are there special factors governing supply in the different areas, for example, isolation?

g) Do teachers go back to their home community to teach?

h) How do teachers teach?

i) Open classrooms or more traditional orientation?

ii) Emphasis on projects, or books and workbooks?

iii) How much pupil discussion?

iv) Classroom grouping procedures? (Probably only at primary/elementary levels).

v) Individual student factors which are considered?

vi) Use of games, drill, and so forth?

vii) Emphasis on laboratory work?

6. Pupils

a) What has been the traditional source of students in the schools of the various areas? From local, established families, or intenerate families?

b) Have there been recent changes in the pattern of sources in recent years apart from movement occasioned by oil development?

c) What has been the traditional language experience of the students? Has this been a factor in their education and achievement?

d) What has been the characteristic academic ability of students, and the variability of that ability in the classroom? Are the students in some areas more academically able than in other areas?

e) What is the characteristic classroom behavior?

i) Students quiet or outspoken?

ii) How much, and what type of misbehaviors are there?

f) What is the career development pattern of the various types of students? When do they make career choices? What proportion pursue vocational or academic goals?

g) What has been the traditional mobility pattern of students? Do they leave home for advanced training?

Do they return home after training?

h) What have been the traditional work patterns for the students? What kinds of careers have they pursued? Has this differed from area to area?

7. Parents

a) Traditionally, what have been the expectations of the parents for the school?

i) With respect to academic goals?

ii) With respect to social/emotional development?

iii) With respect to extracurricular development, i.e., breadth and depth of the children?

iv) With respect to assistance in career development?

b) How have parents related to school?

i) Do they participate actively and initiate contact?

ii) Do they help their children with their work?

iii) Are they helpful in dealing with other school problems?

8. Support Systems

a) What is the nature of social welfare services?

b) How are the welfare services accessed?

c) What is the nature of the service available to assist with psychological and/or emotional problems in students, family disruption, and so forth, as they impact in the schools?

9. History of Oil Development in the Region

a) What was the chronology of events in the various areas with respect ot oil development?

b) As the development unfolded in each area, how was education involved?

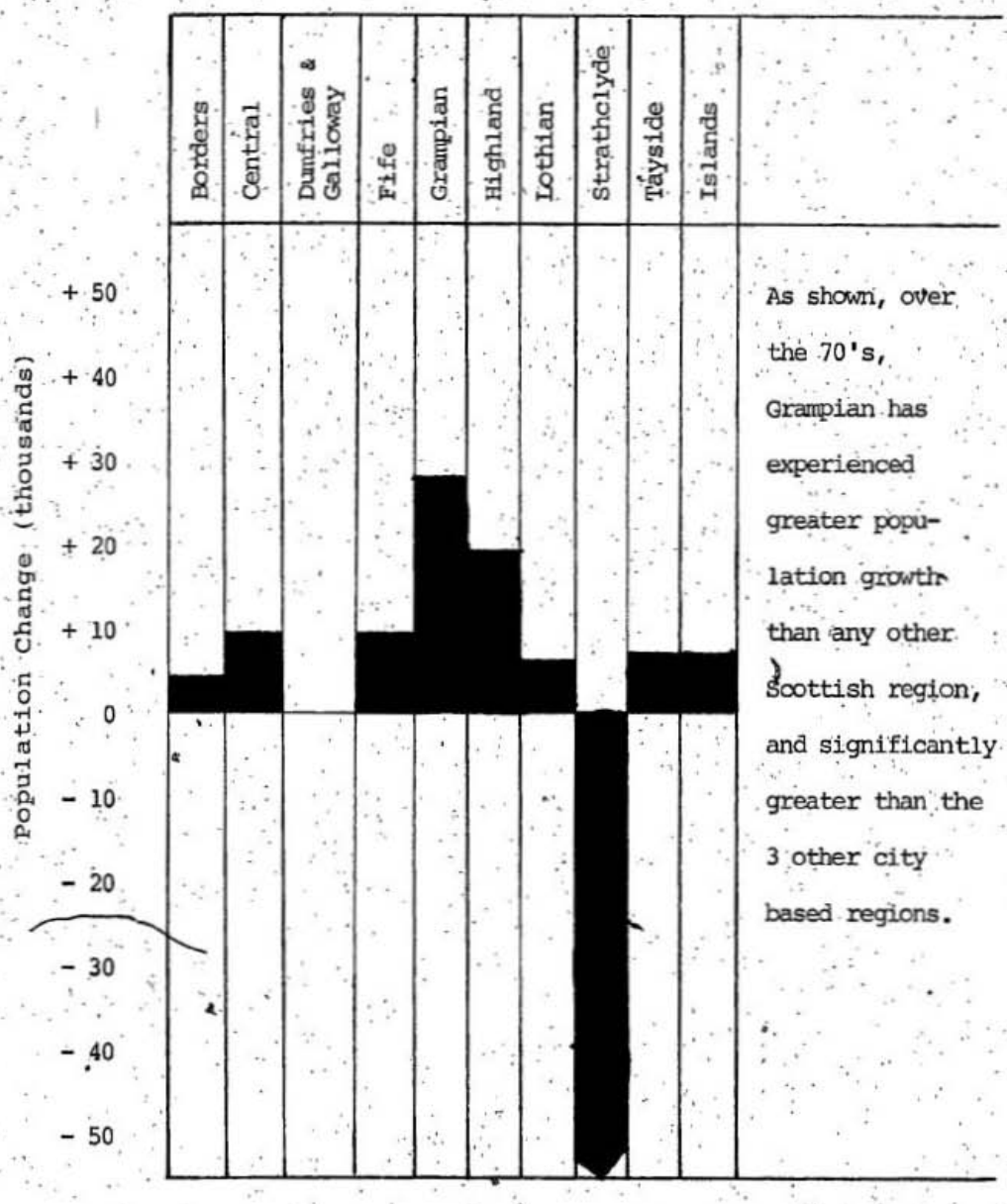
c) Were there differences in the level of educational involvement depending on type of activity; exploration, production, supply and service, construction?

d) What numbers of workers, and worker families were involved? How many school age children, and the age distribution?

e) What was the language background of the students?

APPENDIX B

Population Change by Scottish Regions - 1971-1979



As shown, over the 70's, Grampian has experienced greater population growth than any other Scottish region, and significantly greater than the 3 other city based regions.