HIGHER EDUCATION IN BRITISH COLUMBIA

and a plan for

THE FUTURE

John B. Macdonald

HIGHER EDUCATION IN BRITISH COLUMBIA
and a plan for
THE FUTURE

HIGHER EDUCATION IN BRITISH COLUMBIA *and a plan for* THE FUTURE

John B. Macdonald

Published by
THE UNIVERSITY OF BRITISH COLUMBIA
VANCOUVER, CANADA, 1962

Experience shows that a society, however successful it may have been in the past, will not long survive if it cannot cope with the tasks of a new era. For this reason every civilised society tends to develop institutions which will enable it to acquire, digest, and advance knowledge relevant to the tasks which, it is thought, will confront it in the future. Of these institutions, the university is the most important.

Cited by Eric Ashby in *Universities Under Siege*

Contents

Tables

Figures

Appendices

Preface

IN RECENT YEARS many citizens of British Columbia have been aware of a growing need for additional opportunities and facilities in higher education. Unfortunately, the problems of rapid growth at the University have been so pressing that there has been little opportunity to study the long-term requirements for higher education throughout the Province. The time has now come when plans must be made if British Columbia is to provide those educational opportunities which are essential for its social, economic, and cultural progress. The matter is one of the gravest urgency.

As documented in this report, the anticipated growth in demand for higher education in the next eight to ten years will require not only additional institutions, but also an extension of the aims of the University itself, particularly in the field of graduate studies. The physical facilities needed, the operational funds required, and the demand throughout the world for qualified teachers and professors, all these pose problems of a totally new dimension for British Columbia.

The critical need for realistic planning and the urgency of reaching decisions are the basic reasons why this study was

undertaken. It represents the results of personal investigation and a series of studies undertaken for me and at my request by members of the Faculty. The studies have brought me into direct contact with many groups and persons as shown in an appendix, and I have profited greatly from their careful consideration of the needs for the future. However, the views expressed are my own, and thus represent my recommendations about the course which should be taken if we are to develop an adequate system of higher education in the Province. It is my hope that my recommendations will be favourably considered by the Senate and Board of Governors of the University of British Columbia, its Faculty, the Victoria College Council, the Provincial Government and the citizens of British Columbia. In this report I endeavour to provide essential facts as a basis for action. Doubtless some of my recommendations will be debated. However, the urgency of the situation requires that decisions be made promptly. Let us recognize too that delay is in itself a decision for which we will pay dearly.

I have had only one purpose in conducting these studies and preparing this report: that has been to provide a plan for the best possible development in higher education. Any effective plan must be consistent with our current development, our potential for growth, and the wise and prudent use of our resources to achieve excellence.

The preparation of this report involved the accumulation and analysis of numerous data bearing on populations, school performance, the economy of the Province, geography, cultural and artistic developments and aspirations, industrial and scientific prospects, and the attitudes and objectives of various groups and communities. Visits relevant to the study were made to such representative centres as Victoria, Abbotsford, Chilliwack, Prince George, Nelson, Trail, Cranbrook, Penticton, Kelowna, Vernon, Kamloops, Revelstoke, Salmon Arm, and Nanaimo. I also had discussions with representatives of the British Columbia School Trustees Association from the Greater Vancouver area and the Lower Fraser Valley, the Alumni Association of the University of British Columbia, and the British Columbia Teachers' Federation. I have made

wide use of many studies on higher education in Canada, the United States, Great Britain, Australia, and New Zealand. There is everywhere today an evident concern over the problems of higher education: a total of 153 studies have been conducted since 1956 in the United States alone. Pertinent data are not lacking.

For me this study has been very informative. The warmth and enthusiasm with which I was greeted on my visits is something for which I shall be always grateful. I was particularly impressed with the vision and understanding shown by many persons I met. The briefs submitted to me by groups and individuals have been most helpful in the preparation of this report.

At the time of writing, this report does not represent official policy of the Board of Governors or the Senate of the University of British Columbia. While I must take full responsibility for the views expressed, I am indebted to many of my colleagues for their wise counsel and assistance. They have made my task the lighter and my satisfaction the greater.

JOHN B. MACDONALD

December, 1962
The University of British Columbia,
Vancouver, Canada.

New Dimensions: Higher Education in the Years Ahead

THE KIND OF new world into which we are plunging headlong will bear little resemblance to the world we now know. If we are wise enough and fortunate enough to avoid global warfare and nuclear destruction, it will be because we embrace the opportunities and responsibilities of this new world. Canadians and the Canadian nation have a vital role to play. In the past, we have never been able to persuade citizens and governments that they should support education at the level which is required in the twentieth century. Yet education is the major key to the progress of mankind and the preservation of those rights and privileges which we believe should be shared by all men. The new knowledge of science, properly used, will not only permit us to flourish as a nation, but also allow us to bring the underdeveloped countries rapidly through those stages of development which took richer and more favoured nations centuries to attain.

In the realm of scientific and technological change and the effect of these two forces on every aspect of human life, more has been accomplished in the last half century than in all previous human history. Advances in medicine and the science of human nutrition, the discovery of nuclear fission, and the

whole vista of good and evil that it has opened up to us, new modes of transportation which shrink the physical earth, man's venture into space which explodes our mental horizons, discoveries in electronics, the invention and perfection of computers which permit computations previously impossible in the lifetime of one man—all these factors contribute to make human society more complex and more demanding than it has ever been before. At the same time, in the underdeveloped areas, there is a new surge for self-advancement. Many countries that have been deprived of the basic and fundamental needs of life are reaching out to seize their share of the world's riches. By sharing the benefits of the new learning on an international scale, humanity can reach a level it has never before known. The improvement and amelioration of man's lot can be markedly advanced by the effective and determined application of scientific and technological knowledge to the problems of human society.

Indeed, we are witnesses to the first act of a new scientific revolution and each of us is a member of the cast. Our communities, our work, our play, our lives are shaped by that revolution; and if man is to survive as a species, and if we are to prosper as a nation and as individuals, we must strive to understand the meaning of the revolution as we plan for the years ahead.

As a measure of the pace of change, it has been stated that 90 per cent of all the scientists who ever lived are alive today. In 1940 we knew nothing about the vast potentials of atomic energy. At the moment, however, in 1962 the United States of America is spending 2.5 billion dollars on this new field and its many subdivisions; as a direct consequence, thousands of new occupations have been created, and these demand men and women who are trained in novel skills which can be taught only by our institutions of higher education. Similarly, space research, now the second largest sector of the economy on this continent, was beyond our most extravagant dreams a short ten years ago. Today this enterprise requires vast numbers of persons competent to deal with new technical problems in fields such as electronics, materials development,

fuels, fabrics, foods, medications, computor science, astronomy, physics, chemistry, mathematics, engineering, and instrument design. The list is endless and it goes on lengthening. These are but a few of the challenges and opportunities of a technological society, and Canada, in increasing measure, must share in them.

It is for this new world when the skills of today become obsolete tomorrow that we must fashion our education. The days are rapidly disappearing when the man with little formal training can make an appreciable contribution to our national strength. Muscle-power has been almost totally replaced by the machine. But what is of more importance and direct interest to the individual is that in the world of the twentieth century he must be so educated and his mind must be so trained that he is able to live with some measure of mental ease in a world of constant activity, turmoil and ferment. Education must be designed to permit individuals to interpret and understand the revolutionary changes which are occurring everywhere. The persons who will make the greatest contribution to society will be those educated to the limits of their capacities and talents, by the best kinds of educational institutions we can finance and staff.

Human resources are our most important asset for tomorrow. The nation making inadequate use of its citizens through failure to educate them will be a nation doomed to economic distress at best, and economic disaster at worst.

What are the prospects for British Columbia in this age of rapid change? The Province has been blessed with an abundance of natural resources which have provided a basis for an expanding industrial economy. The population has soared more rapidly here than in the rest of Canada: it is the only Province which has shown an increase in population in every decade since 1925. British Columbia has grown even faster than the meteoric California, increasing by 41.4 per cent as opposed to California's 38.8 per cent in the years 1945-1956.[1] The growth in population in Canada during the same period was 30 per cent.

Average incomes in British Columbia continue to be among

the highest in Canada. At the same time, there has been an increasing shift away from the primary industries from which the Province has derived its economic strength—agriculture, forestry, fishing, and mining.

By 1959 these four industries employed only 11.6 per cent of our labour force as compared with 29 per cent twenty years earlier. Currently the percentage of persons engaged in vocations involving public or personal services, trade, transportation, storage and communications has increased to 60 per cent of our total labour force.[2] Finally, manufacturing occupies about 21 per cent of the employed population. Manufactured goods have been concentrated in relatively few items, notably forest products, but increasing diversification in products is already noticeable. The United States is the chief export market and continues to grow in importance. Growth of exports to other countries has been slow. An increasingly serious problem has been that of unemployment because jobs for the unskilled become scarcer and scarcer as machines replace men. Concurrently the Province is experiencing a shortage of skilled and professional people.

There can be no doubt that the Province will continue to grow. It is predicted that the population will be approximately two millions by 1971 and three millions by 1981.[3] Power development, improved transportation, natural resources and access to foreign markets *could* attract a host of new industries, and thereby benefit the life of every citizen in British Columbia. Encouragement will also come from the increased domestic market in Western Canada (7-8 millions by 1981).[4] In final analysis, however, the increasingly complex and specialized industries of the future will be established only where there is a pool of educated human beings, trained to serve these industries. In consequence, a new challenge faces British Columbia in the years that lie ahead.

Though we are blessed with a host of physical attributes for a healthy economy, the key to competition and growth is the condition of the human resources. Do we have the vision, imagination, determination and courage to plot an educational course which will ensure our position in the front ranks? Or

TABLE 1. ENROLMENT IN UBC, VICTORIA COLLEGE, AND SENIOR MATRICULATION, 1955-62
(WINTER SESSION ONLY)

YEAR	UBC	VICTORIA COLLEGE	SENIOR MATRICULATION
1955-56	6,403	397	879
1956-57	7,699	575	814
1957-58	8,986	672	836
1958-59	9,950	866	1,003
1959-60	10,642	1,054	1,188
1960-61	11,621	1,413	1,400
1961-62	12,950	1,739	2,000

are we so submerged by our present creature comforts, our past successes, and our confidence in the endless bounty of the land in which we live, that we will pursue blindly a comfortable course that will lead us to ultimate failure?

At the end of the Second World War, the University of British Columbia, together with most other Canadian universities, entered a period of unprecedented expansion brought about by population increases and a mounting interest in college and university education. In the past seven years, the University of British Columbia and Grade XIII have seen enrolments double; enrolment at Victoria College has quadrupled. (Table 1). The number of students registered in the University and colleges in British Columbia in 1961-62 was 14,710* or 17.7 per cent of the college-age population, that is the age group 18-21. This figure compares with 12.3 per cent in Canada as a whole and 39.5 per cent in the United States. (Figure 1). The low proportion obtaining higher education in British Columbia and Canada as compared with the United States is reflected in employment patterns. Because of our educational history, less than one quarter of the Canadian labour force is in skilled occupations. This contrasts markedly with the United States where one half of the labour force can be so classi-

* D.B.S. #81-204: This total includes students at Royal Roads, theological colleges, and private institutions.

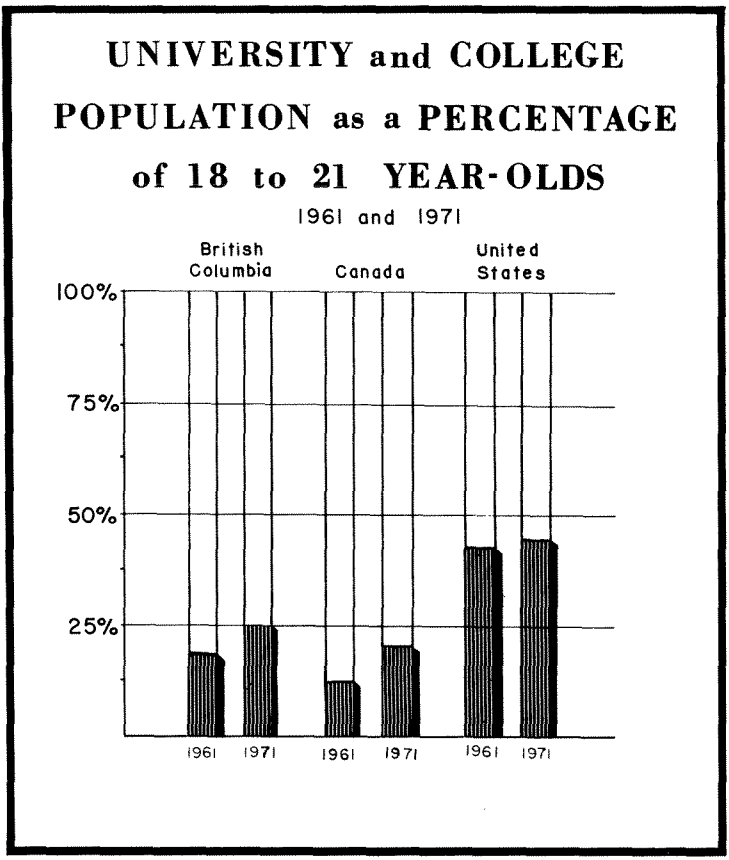

FIGURE 1

fied. Professional people account for only 6.2 per cent of the Canadian labour force; the proportion in the United States is three times as high, that is 18.6 per cent.[5] In proportion to the size of its population, Canada employs approximately one half the number of scientists and engineers employed by the United States.

I cite the case of the United States because we live in such close association with them and because our economy is inevitably affected by trends in that country. We are often compared with them, not only in Canada but elsewhere across the world. However, Russia's efforts, vigor, and accomplishments

in education have been more impressive than those of the United States. Russian scientific accomplishments speak for themselves. Although it is often said that Russian education is geared to emphasize science and engineering, their whole programme is most impressive in many fields, including the humanities and the social sciences. Russian students receive *13,000* hours of schooling in eleven years contrasted with *11,000* hours in twelve years for United States students. Each year Russia graduates more students in agriculture, health, medicine, and engineering than does America. In a period of 25 years, Russia increased school enrolments from ten millions to thirty-five millions, whereas the United States took 80 years to accomplish this same measure of growth. It is estimated that by 1965, Russia will have twice as many engineers as the United States.[6] Even though we make allowances for the size of our population, it is clear that Canada falls well behind both these giants, not only in the field of science and technology but in the whole area of education.

If Canada is to play the role that she ought to play in international affairs, our educational system must be nourished and expanded at an unprecedented rate. Over the next eight or ten years our task in the Province of British Columbia will be one of paramount importance. Because our population is growing at the rate I have indicated in Table 2, and because of the quickened interest everywhere in higher education, it is estimated that some 37,000 high school graduates will be either seeking higher education or enrolled in our colleges and universities by 1970-71. This means that 25 per cent of the college-age population will be seeking entry to college or university in British Columbia. In 1971, the proportion in British Columbia will compare with about 21 per cent for the whole of Canada and 45 per cent for the United States of America.

No one has ever been able to measure what percentage of a population has the intellectual endowment to profit by education beyond the high school, but if British Columbia could select the ablest and best qualified 25 per cent of all students in 1970, the outlook would be encouraging. In Canada as a

TABLE 2. B.C. POPULATION & PROJECTIONS, 1921-1975

YEAR	ACTUAL	PROJECTED
1921	524,000	
1951	1,165,210	
1952	1,205,000	
1953	1,248,000	
1954	1,295,000	
1955	1,342,000	
1956	1,398,464	
1957	1,487,000	
1958	1,544,000	
1959	1,570,000	1,598,040
1960	1,606,000	1,653,971
1961	1,629,082	1,711,860
1962	1,659,000 (est.)	1,771,775
1963		1,833,787
1964		1,897,970
1965		1,964,399
1966		2,033,153
1967		2,104,313
1968		2,177,964
1969		2,254,193
1970		2,333,090
1971		2,414,748
1972		2,499,264
1973		2,586,738
1974		2,677,274
1975		2,770,979

Source: Actuals—D.B.S. and Bureau of Economics and Statistics, Victoria. Projections from Royal Commission on Education—Table 6, p. 30.

TABLE 3. FULL-TIME GRADUATE ENROLMENT BY PROVINCE AND FACULTY—1961-62

	B.C.	ALTA.	SASK.	MAN.	ONT.	QUE.	N.B.	N.S.	N'FLD.	CANADA TOTAL
Arts	157	102	27	66	900	727	38	42	—	2,059
Pure Science	275	213	101	97	712	547	48	47	—	2,040
Arts, Science not included above	—	—	—	—	22	—	—	8	15	45
Agriculture	27	41	28	32	99	80	—	—	—	307
Architecture	—	—	—	1	25	6	—	—	—	32
Commerce & Business Administration	12	—	—	—	297	185	—	—	—	494
Dentistry	—	—	—	—	25	8	—	—	—	33
Education	194	29	6	—	*	111	3	—	2	345
Engineering, Applied Science	85	56	47	24	257	134	51	6	—	660
Forestry	21	—	—	—	12	21	9	—	—	63
Household Science	—	—	—	1	—	—	—	—	—	1
Law	—	—	—	—	6	91	—	—	—	97
Medicine	2	22	16	34	438	197	—	41	—	750
Music	—	—	—	—	5	24	—	—	—	29
Nursing	—	—	—	—	12	28	—	28	—	68
Pharmacy	2	6	1	2	6	1	—	—	—	18
Physical & Health Education	4	2	—	—	—	—	—	—	—	6
Physio, Occupational Therapy	—	—	—	—	17	13	—	—	—	30
Social Work**	27	—	—	30	**	127	—	—	—	184
Veterinary Science	—	—	—	—	15	—	—	—	—	15
Others	2	—	—	7	55	7	—	—	—	71
	808	471	226	294	2,903	2,307	149	172	17	7,347

*Included in undergraduate enrolment **Includes Master of Social Work students only

Source DBS—#81-204—Fall Enrolment in Universities and Colleges, 1961

TABLE 4. GRADUATE STUDENTS AS PERCENTAGE OF TOTAL ENROLMENT AT SELECTED UNIVERSITIES

UNIVERSITY	TOTAL ENROLMENT	GRADUATE	%
CANADA, 1961-62			
British Columbia	12,602	798	6.3
Toronto	14,302	1,531	10.7
Manitoba	4,433	292	6.6
McGill	8,507	924	10.9
Queen's	3,352	281	8.4
U.S.A., 1958-59*			
Chicago	6,817	4,606	67.5
Columbia	20,231	12,730	62.9
Harvard	11,038	6,500	59.0
Yale	7,773	3,885	50.0
Michigan	26,581	9,012	33.9
California	43,478	12,292	28.3
Indiana	23,531	6,798	28.9
Rutgers	15,308	3,650	23.8
Washington	16,202	3,349	22.9
Oregon	7,082	1,168	16.5

* Since 1958-59, the proportion of graduate students at some of these universities will almost certainly have increased.

whole, we appear to be a long way from such an objective. Throughout Canada only one half of the matriculants with 70 per cent or better go on to university, and half of those now at the universities have grades below 70 per cent. More striking evidence of the inadequacy of current selection in Canada is the fact that of one hundred pupils entering Grade II, only nine ultimately enter university and only six of these graduate.[7] According to a report produced by the Canadian Universities Foundation, the 37,000 students in institutions of higher education in British Columbia in 1970 will be part of 312,000 for the whole of Canada, i.e. two and three quarter times as many as in 1960 (114,000).[8]

The most crucial problem facing us as a result of this enormous increase will be that of producing and finding staff and facilities for our colleges and universities. In British Columbia alone, for example, the number of additional full-time staff members required to maintain the current staff-student ratio will be more than 1,000; that is, about 125 members of staff must be added each year. The alarming fact, however, is that the whole of Canada is graduating annually only about 280 Ph.D's. This level of training is almost mandatory for a successful career in university teaching. In the past, Canadian universities and colleges have been obliged to recruit many of their staff members elsewhere, drawing principally on the graduate schools of the United States and Great Britain, with a few coming from the universities of Europe. To meet the crucial demand for college teachers and the equally critical demand for highly qualified personnel for industry, commerce, science and engineering, will require a very substantial increase in the capacity of our graduate schools. The present enrolments in graduate schools in Canada are indicated in Table 3. Every Canadian university lags far behind the leading universities elsewhere on this continent. (Table 4).

British Columbia, with all its wealth and with the second largest English-speaking university in the country, is well behind seven other Canadian institutions and behind the very low Canadian average. And yet, it is precisely from our graduate schools that our most distinguished scholars, scientists, teachers and various other leaders will come. The magnitude and gravity of this situation has not been grasped by the vast majority of our citizens.

Second only to the problem of staffing our universities is the need for an entirely new concept of financing higher education. I estimate that per student costs in 1970 will be double those of the present day. This is in consequence of the increasing demand for higher education everywhere; the need to strengthen our graduate schools and so attract and retain superior university professors; the need to maintain salary levels competitive not only with other universities on this continent, but also with business, commerce, and government—

all of which require men and women who have comparable skills, aptitudes and abilities to those we require in university teachers.

The present average cost of higher education in Canada is $1,550 per student per year. It is expected to increase to $2,100 by 1965, and in my judgment, to $3,000 by 1970.[9] Cost per student over the last five years in Canada went up from $1,072 to $1,550.

May I cite an example of the competition going on for university staff members. The *President's Committee on Education Beyond the High School, 1957*, in the United States of America has recommended that "the highest priority in the use of available funds be given to raising faculty salaries with the goal of doubling the average level within five to ten years, and with particular attention to increasing the spread between the bottom and the top of each institution's salary structure." This objective is likely to be attained in the United States of America, and it will be imperative for Canadian universities and colleges to keep pace if they are to retain the staff members they presently have and encourage others to join the faculty. In the recent past, 43 per cent of Canada's university teachers were recruited from other countries.[10] Unless a change comes about in the number of university teachers we ourselves can train, that proportion can only increase.

If we now translate the projected cost per student for the year 1970-71 into total operating cost of higher education in British Columbia, knowing there will be 37,000 students demanding higher education, we arrive at a figure of 111 million dollars a year. Some factors may operate to keep the figure down: for example, decentralization, and further modification and modernising of teaching methods. These factors, however, will be more than counterbalanced by the very much higher costs of graduate education. Graduate students need supervision and personal attention of the most careful kind by highly qualified professors. The "library of instruments" they need for carrying out original research work is extremely costly. In consequence, the cost of training a graduate student is many times that of a student at the first or second year level.

On the University of California campuses, for example, the educational cost for one graduate student is from two to five times as high as the cost of an undergraduate student. At the Davis Campus, the average cost per year was over $6,000 in 1957-58.

Capital costs for the five years from 1960 for higher education in Canada according to Sheffield in his report for the Canadian Universities Foundation could go to one billion dollars or $200 million per year.[11] The population of British Columbia is approximately 10 per cent of that of Canada; therefore, proportionately the projection for British Columbia is $20 million per year for a total of $100 million by 1965-66.

Clearly the task and cost of meeting the requirements for higher education in the years ahead are of a new dimension. These costs cannot be met by any single group within society, but no group can avoid sharing in the responsibility. Paying for higher education must become a matter of the highest priority for the Provincial Government. The Federal Government, which at the moment supports higher education directly at the rate of $2.00 per head of population, must now support higher education on a new and imaginative scale. Municipalities must also be asked to share generously in providing funds. Corporations and industry must nourish the source of their growing strength. Labour must recognize the genuine contribution of higher education to the prosperity and the status of the working man. Graduates of our colleges and universities must meet their personal responsibilities to the institutions that have helped them. The contribution of a university education to a life-time earning exceeds $100,000.[12] College for those who can qualify has been in terms of an investment the best bargain they could buy.

Such are the dimensions of the tasks and such are the issues which are dealt with in this report.

References

[1] *The British Columbia-Alberta Market*, Western Development and Power Limited (no date).

[2] G. R. Knight, "Status of the British Columbian," *13th B.C. Resources Conference*, 1961.

[3] *B.C. Energy Board Load Forecast*, 1961.

[4] *The British Columbia-Alberta Market*, Western Development and Power Limited.

[5] A. V. Pigott, *Education and Employment*, Canadian Conference on Education, Study No. 9, 1962.

[6] S. H. Deeks, "Democracy at the Crossroads" *Report of the Joint Planning Commission, Canadian Association for Adult Education*, 1961.

[7] Pigott.

[8] E. F. Sheffield, *University Development: The Past Five Years and the Next Ten*, 1961.

[9] E. F. Sheffield and C. M. Apsimon, *University Costs and Sources of Support*, 1962.

[10] Sheffield, *University Development.*

[11] Sheffield and Apsimon.

[12] S. E. Harris, *Higher Education: Resources and Finance*, New York, 1962, p. 151.

Excellence as a Goal

IT IS AXIOMATIC that we seek excellence in education: no lesser goal is worth the effort. Nevertheless, excellence in education is rare. It is to be found when carefully nurtured and cultivated; in the absence of a good environment it is easily choked out by the weeds of mediocrity. Excellence cannot be legislated; it cannot be purchased; it cannot be proclaimed; and it cannot be assigned. It can be sought and encouraged and rewarded, and this is the task in planning for higher education in British Columbia—to seek, encourage, and reward excellence.

Two requirements are fundamental to the promotion of excellence in British Columbia's higher education. These are first, diversification of opportunity, both in respect to the *kinds* of educational experience available and the *places* where it can be obtained. The second requirement is self-government of individual institutions in respect to setting objectives, standards, admissions, selection of staff, curricula, personnel policies, administrative structure, and all the other things that go to make up the operation of a college. These two elements—diversification and self-government—together will not insure

excellence, but in their absence an excellent system of higher education in British Columbia would be unattainable.

The reasons why British Columbia needs a number of different kinds of educational opportunity beyond Grade XII should be obvious. Society demands many different kinds of talents of its citizens. It would be a utopian world perhaps if every member of society had the required intellectual endowment and motivation to profit by a broad liberal education, one which would successfully bridge Snow's two cultures, and prepare each man for a role of informed leadership. But such an ideal situation would require automation far beyond our present prospects to undertake the many tasks of day-to-day living which presently are performed economically and happily not by the leaders but by the great majority of our good citizens. The fact is that such a utopia is unattainable. Individuals may be suited intellectually and by aptitude and attitude for very many different kinds of vocation. A person may become a theoretical physicist, electronics technician, agricultural scientist, statesman, school teacher, physician, pharmacist, lawyer, or astronaut. Clearly many different kinds of education are required for citizens whose talents and interests are so different and whose vocations or careers are so dissimilar. It is inconceivable that any one educational institution can serve successfully the wide range of educational objectives needed for the modern world. Any institution which sets out to be all things to all people will end up doing many unrelated educational jobs, at high cost, and it is likely to do none of them well.

The kinds of programmes needed to meet the varied demands are themselves numerous. They include one or two years of purely technical training beyond Grade XII; combinations of technical training in arts and science over a two-year programme; the first two years of a four-year college curriculum—either as a terminal experience or as preparation for advancement for the able students; colleges offering a four-year liberal education leading to a degree; and universities offering college curricula plus the opportunity for specialization through graduate education in a variety of fields or pro-

fessional education in professional schools. All of these programmes are needed now in British Columbia and, as will be shown subsequently, the costs of higher education can be reduced by having them all, rather than by trying to concentrate all training at the University and Victoria College.

The reasons for geographic dispersion of higher education relate primarily to the critical need to seek out and attract to higher education all those who can profit by the experience and in so doing enrich our society. The dearth of educational opportunity in the interior of the Province means that an important stimulus is missing which should be attracting all the ablest students to college or university. Many potential leaders remain unchallenged by the opportunities for higher education simply because they live in communities where the rewards of intellectual endeavour are not made evident by the presence of a college.

An additional important reason for geographic decentralization relates to the resulting economies. The economies for British Columbia are disclosed in analyses reported in a later section of this report. The findings are supported by experience elsewhere. The California Master Plan, concerned with a public higher educational system equal in size to that of all Canada, shows that it can be cheaper in both capital and operating costs to provide education in a junior college than in a state college, and similarly, cheaper in a state college than in a university. The California report concludes also: "With a constant percentage (of students) housed, the estimated cost of expanding an existing campus is so little less than that of developing a new campus, that such factors as land costs could tip the scales either way. If, however, the alternative to new campus development involves a significantly greater percentage of students housed on the expanded existing campus, then the difference in capital outlay generally is clearly in favor of the development of new campuses."[1] This is the situation in British Columbia.

In order to develop an excellent system of higher education for British Columbia, the individual institutions must be self-governing in respect to their academic program. The most

important reason is that an institution can achieve excellence only if it can define its own goals and organize its own programme in such a way as to achieve its goals.

In a study undertaken in Michigan the principles were summarized succinctly:

"The first important principle is that a state's program of higher education is strong only as the individual institutions are strong and maintain services of high quality in the programs that are offered. The primary purpose of a state system of control and co-ordination should be to encourage the development of the greatest possible strength in the individual institutions of the system.

"The second important principle is that the mere presence of one or more strong institutions does not add up to an effective state program of higher education. All the institutions in the system must be strong, if the service is to be effective. This is particularly true in a state of large area, . . . because students tend to go to whatever college or university is close to their homes.

"The third important principle is that strength in an institution is closely associated with autonomy in the making of essential decisions affecting the institution's operations. It is virtually impossible to build a strong institution of higher education unless it is given the maximum of self-determination in its operations."[2]

Those who favor a unified system with all institutions meeting identical standards, at least in theory, do so on grounds that unification insures satisfactory standards. The argument is in error. First, standards cannot be legislated. Simply to say that the same course in chemistry will be offered by the University of British Columbia and a two-year college in the interior does not make it the same course. In the last analysis the quality of the course will depend on the ability and qualifications of the teacher. If the objectives and character of the curriculum at the University of British Columbia and a two-year college are declared to be identical, which institution will attract the better teacher? The University of British Columbia, of course, because the University of British Columbia can

offer the stimulus and challenge of many able confreres, the possibility of participation in graduate education, the resources of research, extensive library holdings, and the complex facilities of a large modern department of chemistry. The only way the two-year college can compete for competent staff is to offer a programme which is unique and to provide opportunities which contrast with those of the University, such as small classes, seminar education, intimate association with other disciplines, higher standards of admission, avoidance of a complex administrative hierarchy, and greater emphasis on experiment in education.

I have heard fears expressed that any new college given self-governing independence is likely to be a substandard institution. I would remind those holding this defeatist viewpoint that if this kind of thinking had prevailed fifty years ago the University of British Columbia would never have been established.

There is a second fallacy in choosing a unified system. In seeking to guarantee minimum standards, the system, in fact, places a ceiling on standards. No institution can be better than the next. Credits are freely transferable from one institution to another—a grand design dedicated perforce to mediocrity.* Whatever this is, it is not education at its best. No institution and no one system has the answer to what is best in education. Free enterprise here, as much or more than elsewhere in our society, is the essential key to progress. The proposition was expressed eloquently by Felix Schelling: "True education makes for inequality, the inequality of individuality, the inequality of success; the glorious inequality of talent, of genius. For inequality, not mediocrity—individual superiority, not standardization—is the measure of progress in the world."[3]

---

* Transfer should be possible between institutions but it should be based not on identity of courses but on performance of students. Admission policies should be concerned less with prerequisites and more with evidence of ability when students seek transfer from one institution to another.

References

[1] *A Master Plan for Higher Education in California, 1960-75*, California State Department of Education, 1960.

[2] John Dale Russell, *The Final Report of the Survey of Higher Education in Michigan*, 1958, p. 111.

[3] *Saturday Review*, 19 May, 1962, p. 78.

The Present Position of Higher Education

A BRIEF HISTORICAL SKETCH will illustrate the initiative, patience, and persistence that led to the establishment of institutions of higher education in British Columbia. The first official reference appeared in the 1877 *Annual Report of the Provincial Superintendent of Education*, stating that a university would soon be necessary to enable young men and women of the Province to graduate in Arts, Law, and Science without having to go elsewhere. With only 41 elementary schools and one high school in the Province, no action followed However, in 1890 an *Act Respecting the University of British Columbia* was passed, but accomplished little because of a conflict of local interests concerning the location of the University.

In 1898, 21 years after the first official reference, the high schools of Vancouver and Victoria affiliated with McGill University to provide the first year in Arts. Eight years later the Province granted incorporation to the Royal Institute for the Advancement of Learning, to supervise McGill University College of British Columbia. The College, during its earlier years starting in 1907, provided two years in Arts and one year in Applied Science for credit at McGill; subsequently, another year's work in each course was added.

In 1910 a group of educators from outside the Province, appointed by the Government, recommended the establishment of the University on Point Grey, and in 1914 construction commenced on the Science Building. With the outbreak of World War I work was stopped, and in September, 1915, the University of British Columbia was established in the Fairview premises of the Vancouver General Hospital, which had been used by McGill University College since 1912. The students and staff of the College provided the nucleus for the University, the enrolment being 379. Victoria College, with an enrolment of about 70 students, discontinued instruction at that time. In 1920 Victoria College was re-opened in affiliation with the University to give the first two years in Arts.

In 1923 work was resumed on the Science Building, and some semi-permanent buildings were constructed. In 1925 the University was moved to Point Grey. Student enrolment had been increasing, having reached 962 in 1920-21 and 2,044 in 1930-31. (Figure 2). During the financial depression of the 1930s, the University's budget was cut, staff had to be reduced, and the University was in danger of closing. But as economic conditions improved the University resumed its advance, until further development was checked during World War II.

The end of World War II marked the beginning of a period of tremendous expansion. By 1947-48 the influx of student veterans had increased the enrolment to nearly four times what it was in 1944-45, with over 50 per cent of the total enrolment being veterans. As this wave of student veterans graduated, the enrolment dropped. However, as the increased population of the Province had its effect, enrolments at the University and Victoria College rose at a steadily increasing rate. The establishment of the College of Education in 1956, bringing all teacher training under the University and Victoria College, increased the enrolment appreciably.

Until the end of World War II the Provincial Government grant had increased very little beyond what it was nearly a quarter of a century earlier. In 1920-21 the grant was $420,000; in 1940-41, $425,000; and in 1944-45, $498,000. Under these circumstances little or no expansion was possible. However,

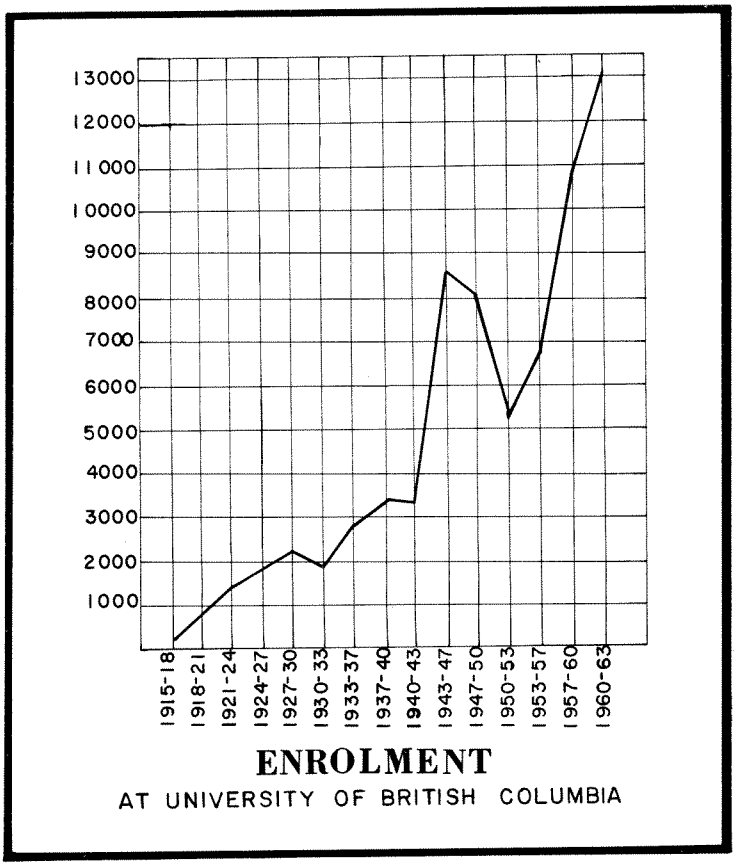

FIGURE 2

in order to carry out the educational provisions of the Rehabilitation Act, the Canadian Government instituted direct financial aid to Canadian universities, and the Provincial Government increased its annual grants. In 1951 the Canadian Government acknowledged a continuing responsibility for the support of university education and instituted grants toward operating costs on a per capita basis. These were subsequently increased. University costs and students' fees have risen in keeping with the prevailing economic trend.

Support for special projects has been derived from Alma Mater assessments, grants from various foundations and indus-

tries, and gifts from private donors. Several such grants and gifts have greatly increased university scholarship, bursary and loan funds, which have been further extended by the Provincial Government's Scholarship and Student Loan programme. The establishment of the Canada Council in 1957 provided grants for both capital expenditures and special projects within the Council's terms of reference. The National Research Council, the Defence Research Board, and other government agencies, have provided grants for research within their spheres of interest. In 1957 the University launched a public appeal for capital funds to be matched by Provincial Government grants. The success of this appeal in raising $11,175,380 (pledged) indicated the importance which the public of the Province and the country assigned to higher education. A public appeal by Victoria College was similarly successful in terms of its objective.

The student veteran programme gave an entirely new impetus to the development of the University. This was not merely a matter of increased enrolments but also of public support and of an assiduous endeavour to bring the institution to the full stature of a comprehensive university. Funds from the sources previously mentioned, along with greatly increased capital and operating grants from the Provincial Government, enabled this expansion to proceed. New faculties of Law, Medicine, Graduate Studies, and Education were added; and several departments such as Forestry, Pharmacy, and Commerce and Business Administration were constituted as faculties. Other departments were reorganized as schools, and several new departments were added. This expansion has continued, and in 1961-62 the opening of the School of Librarianship and the decision taken in 1962 to establish a Faculty of Dentistry brings the institution to the full status of a comprehensive university. During this period, course offerings, particularly at senior levels, were greatly extended to provide the range of instruction that is typical of well-recognized universities. Similar developments have taken place at Victoria College, although on a less extensive scale. Only in the last several

years has the College offered courses beyond the second year in Arts and Science and in Education.

Great credit for expanding the University must go to the vision and enterprise of my predecessor as President of the University, Dr. Norman MacKenzie, and to the staff who worked under his direction. However, the task is far from completed; and British Columbia, along with the other provinces of Canada, is still confronted with the rapidly increasing number of young people of superior endowment for whom higher education should and must be provided.

At present two types of institution, other than Grade XIII high school, provide higher education in British Columbia:

1. Provincially supported institutions that provide four or more years of academic education:
   (i) The University of British Columbia;
   (ii) Victoria College.
2. Denominational colleges that provide one or more years of academic education:
   (i) Notre Dame University College at Nelson;
   (ii) Prince George College at Prince George;
   (iii) Trinity Junior College at Langley.

THE UNIVERSITY OF BRITISH COLUMBIA. The University of British Columbia occupies approximately 1,000 acres on Point Grey, outside the city limits of Vancouver. On the same premises are laboratories of both the Provincial and Federal Governments. The University buildings include classroom and library facilities, laboratories, residences housing 2,526 students, and other premises required for the teaching and research activities of a major institution of learning.

The British Columbia University Act, 1936, as amended, provides for a Board of Governors dealing with finances, properties, appointments, salaries, etc., and a Senate and Faculties dealing with academic matters, admissions, standards, courses, degrees, etc. The Chancellor, who is elected by Convocation, is chairman of the Board of Governors. The President, who is appointed by the Board of Governors, is chairman of the Senate and the chief executive officer of the University.

Admission Requirements. The University has full control

TABLE 5. EDUCATIONAL LEVEL OF STUDENTS
ADMITTED FOR THE FIRST TIME

ENTRANCE STANDING	1957-58	1958-59	1959-60	1960-61	1961-62
British Columbia	1,718	2,028	1,991	2,308	2,349
Other Provinces	84	90	93	99	101
Non-Canadian	142	96	96	105	96
SENIOR MATRICULATION (GRADE XIII, B.C.)					
British Columbia—Full	345	338	319	393	474
British Columbia—Partial	209	256	308	359	596
Other Provinces	131	128	163	184	161
Non-Canadian	78	54	53	53	54
One Year Victoria College	63	72	48	47	67
Two Years Victoria College	50	66	42	40	53
Undergraduate above Matriculation	119	133	151	117	110
Graduates	220	220	211	206	256
Mature Non-Matriculants	15	21	16	16	12
SUMMARY					
University Entrance	2,153	2,390	2,377	2,512	2,534
Senior Matriculation	617	606	694	1,035	1,352
Above Senior Matriculation	389	419	404	363	419
Mature Non-Matriculants	15	21	16	16	12
	3,174	3,436	2,491	3,926	4,329

over admission requirements and at present accepts high school graduation in the University programme as the minimal academic requirement for admission. High school examinations are administered by the Provincial Board of Examiners, on which are representatives of the University and of the Department of Education. Only those students are admitted who complete in full the requirements as a result of recommendation by an accredited high school or by written examinations in June. Those who fail to obtain complete standing in June are not admitted in the year the examinations are tried.

The minimal academic requirement for those from outside British Columbia is the equivalent of Grade XIII in British Columbia.

Applicants who have completed Grade XIII in this Province, subject to certain requirements, are granted standing in equivalent subjects of first year Arts and Science.

Table 5 shows the educational level of students admitted for the first time.

As shown in Table 5 considerably more than one half of the students entered the University with Grade XII qualifications. In 1961-62 the intake of this group was 36.7 per cent greater than in 1957-58. The number entering at this level from other provinces or countries is relatively small.

The second largest group entered with either full or partial senior matriculation. While those entering with full senior matriculation in 1961-62 show an increase of 37.4 per cent over those entering at this level in 1957-58, the number entering with partial senior matriculation in 1961-62 was 184.3 per cent greater than 1957-58. These increases can be attributed largely to additional provision for senior matriculation in the high schools. Some of the increase in the number with partial senior matriculation may be attributed to the high schools providing enriched and accelerated courses for the better students, although this group includes some of the weaker students who, having to repeat some Grade XII subjects, supplement their courses by taking some Grade XIII subjects. The numbers coming after one or two years at Victoria College are not large and show no significant change over the period.

Those admitted as graduates for the first time constitute about 40 per cent of the total enrolled in the Faculty of Graduate Studies. The lack of any marked increase in the size of this group may be attributed in part to the inability of the University to develop Graduate Studies to any great extent because of the continuous pressure of mounting undergraduate enrolments. This is a critical situation because the staffing of Canadian universities depends upon those who complete post-graduate studies. Higher education cannot be maintained unless graduate faculties in Canadian universities rapidly extend their facilities for advanced work.

Shown below are the University faculties with their degrees and principal requirements:

FACULTY	ADMISSION REQUIREMENTS	LENGTH OF COURSE FOLLOWING ADMISSION
ARTS AND SCIENCE		
Bachelor of Arts	University Entrance	Four Years
Bachelor of Science	" "	" "
Bachelor of Home Economics	" "	" "
Bachelor of Physical Education	" "	" "
Bachelor of Music	" "	" "
Bachelor of Library Science	Bachelor's Degree	One Year
Bachelor of Social Work	" "	" "
Master of Social Work	B.S.W. Degree	" "
APPLIED SCIENCE		
Bachelor of Applied Science	First Year Arts or equivalent, 60% in Chemistry, Mathematics, Physics	Four Years

Bachelor of Architecture	Three year Arts and Science with 65% average in Third Year or Bachelor's Degree with 60%	Three Years
Bachelor of Science in Nursing	University Entrance	Four or Five Years
AGRICULTURE		
Bachelor of Science in Agriculture	University Entrance	Four or Five Years
LAW		
Bachelor of Laws	Bachelor's Degree or three years of Arts with 65% in Third Year	Three Years
PHARMACY		
Bachelor of Science in Pharmacy	First Year Arts & Science or equivalent with 60%	Four Years
MEDICINE		
Doctor of Medicine	Three years Arts & Science, with 65%	Four Years
FORESTRY		
Bachelor of Science in Forestry	First Year Arts & Science or equivalent	Four Years
COMMERCE AND BUSINESS ADMINISTRATION		
Bachelor of Commerce	First Year Arts & Science or equivalent	Four Years
EDUCATION		
Bachelor of Education	University Entrance	Four or Five Years
GRADUATE STUDIES		
Master's and Doctor's degrees	Bachelor's or Master's Degrees	(Minima) Master, one year Doctor, three years

Enrolment. Figure 2 shows the history of winter session enrolments at the University of British Columbia. With the cessation of World War II, the enrolment more than doubled that of the previous year and reached 9,374 in 1947-48. It was during these years that the staff was rapidly increased and many improvisations were added to accommodate the large student veteran enrolments. Because the building programme has always lagged behind the increasing enrolments, practically all of the huts that were moved to the campus at that time are still in use. As the large student veteran classes graduated, the enrolment dropped to 5,355 in 1952-53. Following this, the enrolments increased, and by 1958-59 had jumped to 9,950, and by 1961-62 to 12,950. It was not the increase in provincial population alone that occasioned this upward trend in enrolment. It was influenced also by a progressively larger percentage of the school population seeking university education. Enrolment in 1962-63 has reached a total of 13,727 students.

The rapid increase in enrolment since the post-war low of 1952-53 has required that much of the University's effort be devoted to the first and second years, where in many courses very large teaching sections have been unavoidable. Nevertheless, the steadily increasing enrolments in the lower years have moved forward into the upper years. Under existing circumstances there is no foreseeable indication that this trend is likely to change, and upper year courses are now reaching a stage where unduly large classes will become inevitable. Consequently, the University must either extend its facilities greatly or restrict enrolment.

The enrolment in the Faculty of Arts and Science, 7,493 in 1962-63, is somewhat more than one half of the total university enrolment. The second largest faculty, Education, has an enrolment in 1962-63 of 2,458. The Faculty of Applied Science, including Engineering, Architecture, and Nursing is the third largest, with an enrolment of 1,253 in 1962-63. The other faculties are considerably smaller.

The occupation of parents of students is of interest. By far the largest numbers come from three occupational divisions,

TABLE 6. A CLASSIFICATION OF PARENTAL OCCUPATIONS AS STATED BY THE STUDENTS AT THE UNIVERSITY OF BRITISH COLUMBIA—1961-62

Agricultural	696
Clerical	457
Commercial	861
Communications	142
Construction	710
Electric light, Power Production and Stationary Engineers	74
Finance	293
Fishing, Hunting and Trapping	139
Labourers (not Agriculture, Fishing, Logging, Mining)	200
Logging	206
Manufacturing and Mechanical	1,636
Mining and Quarrying	126
Professional	2,253
Owners, Managers	2,288
Service	525
Transportation	564
Retired, Unspecified, Disabled or Deceased	1,780
	12,950

namely: "owners, managers, and general service" occupations; "professional" occupations; and "manufacturing and mechanical" occupations. (Table 6). This reflects in some measure the predominance of students who come from Greater Vancouver, where these occupations employ a larger portion of the population than in less urbanized areas. The fact that so many students come from homes that would not be classified as falling within the higher income brackets is one reason why so many students contribute to their own support, either in whole or in part, by summer and part-time employment. It explains also why the University must provide large bursary and loan

TABLE 7. PROFESSIONAL OBJECTIVES OF STUDENTS AT THE UNIVERSITY OF BRITISH COLUMBIA—1961-62

	NO. OF STUDENTS	%
ARTS AND SCIENCE		
Chemistry	257	1.9
Physics	242	1.8
Business	364	2.7
Civil Service	72	.5
Geology	86	.6
Home Economics	189	1.4
Journalism	63	.4
Library	84	.6
Ministry	68	.5
Physical Education	164	1.2
Teaching	981	7.5
Biological Sciences	149	1.1
Social Work	316	2.4
APPLIED SCIENCE		
Architecture	83	.6
Engineering	905	6.9
Nursing	162	1.2
AGRICULTURE	176	1.3
COMMERCE	517	3.9
EDUCATION	2,324	17.7
FORESTRY	176	1.3
LAW	212	1.6
MEDICINE	189	1.4
PHARMACY	137	1.0
GRADUATE STUDIES (NUMBERS ABOVE 25 ONLY ARE INCLUDED)		
Teaching	142	1.0
Biological Sciences	72	.5
Chemistry	60	.4
Engineering	83	.6
Physics	25	—
other	101	.7
undecided	34	.2

Pre-Dentistry	121	.9
Architecture	69	.5
Engineering	392	2.9
Forestry	43	.3
Law	390	2.9
Medicine	371	2.8
Nursing	107	.8
Pharmacy	62	.4
Miscellaneous—Armed Services	115	.8
other	452	3.4
undecided	857	6.5

funds to assist students who would otherwise be unable to finance a university course.

Table 7 shows the students' professional objectives as stated for 1961-62.

Teaching and Education have the largest number, followed by Engineering. By far the largest group of students are in Arts and Science, and the indication is that the number will increase more rapidly than in other more specialized faculties. As has been mentioned, the numbers planning to enter Graduate Studies is disappointing, and is far from meeting the need for qualified teachers for universities and colleges.

Table 8 shows that over 50 per cent of the total number of students have come from the Greater Vancouver area, and the percentage of these students has increased steadily over the period dealt with. As shown in the footnote below the table, about 40 per cent of the students came from Vancouver city. In 1961-62 the Greater Vancouver area, apart from the City of Vancouver, supplied 2,276 students, or 17.4 per cent of the total enrolment at the University.

As is to be expected, relatively few students came from Greater Victoria. It may be assumed that many of these enrolled in professional faculties rather than in general Arts and Science. Since Victoria College has provided a full four-year programme leading to University of British Columbia degrees in Arts and Science, the numbers coming from Greater

TABLE 8. DISTRIBUTION OF REGISTRATION BY REGIONS DURING REGULAR SESSION

AREA	1959-60 Number	%	1960-61 Number	%	1961-62 Number	%
Greater Vancouver*	5,847	54.9	6,548	56.3	7,431	57.4
Lower Fraser Valley	789	7.5	908	7.8	1,029	7.9
Greater Victoria	416	3.9	357	3.1	359	2.8
Remainder Vancouver Island	515	4.8	522	4.5	624	4.8
Okanagan	539	5.1	579	5.1	671	5.2
Kootenays	531	5.0	562	4.8	601	4.6
Kamloops, South Cariboo	221	2.1	241	2.1	245	1.9
Central Interior	122	1.1	133	1.1	160	1.2
Coast	211	2.0	226	1.9	241	1.9
North	64	.6	68	.6	68	.5
Total for British Columbia	9,255	87.0	10,144	87.3	11,429	88.2
Canada— outside B.C.	770	7.2	840	7.2	888	6.9
Other Countries	617	5.8	637	5.5	633	4.9
TOTAL REGISTRATION	10,642	100%	11,621	100%	12,950	100%
*Vancouver City included above	4,405	41.4	4,713	40.5	5,155	39.8

Victoria have decreased, whereas those coming from other regions have increased.

It will be seen that the percentages of students coming from the various regions are highly stable from year to year. The only areas showing decreases by as much as one per cent over the period are Greater Victoria and "outside of British Columbia." The largest percentage increase is for Greater Vancouver, which doubtless reflects the fact that this area of the Province has experienced the greatest population increase over the period. However, as shown in the footnote, the percentage coming from Vancouver city has decreased, probably

TABLE 9. DISTRIBUTION OF FULL-TIME TEACHING STAFF

	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
Professors	127	132	136	143	148	157
Associate Professors	91	98	111	121	132	147
Assistant Professors	141	157	173	193	216	237
Instructors	86	116	110	121	140	123
Lecturers	19	34	92	77	39	37
TOTAL	464	537	622	655	675	701

as a result of the suburban areas of Greater Vancouver increasing more rapidly in population than the city. The rest of the Lower Mainland shows a steady numerical and, since 1958-59, a percentage increase. The Okanagan and the Interior, Central and Northern areas show a steady increase in numbers.

It will be noted that about five per cent of the students came from other countries. In 1961-62 these students came from 53 different countries, the largest number coming from the West Indies. This gives some indication of the international reputation of the University of British Columbia and the extent to which it plays a role in support of our national policy of providing aid for less richly endowed countries. Of course, some University of British Columbia students go abroad to receive senior and post-graduate education in special fields.

University Teaching Staff. Table 9 shows the full-time faculty that is employed for teaching and research.

The number of students per staff member has increased slightly. In the first two years where some very large classes occur, the student-staff ratio is very much larger than for the University as a whole.

The Summer Session. A regular Summer Session of seven weeks' duration is held in July and August. Present enrolments exceed 5,000 students, of whom about 70 per cent are school teachers improving their academic and professional qualifications. A maximum of six units can be taken during a summer session. Summer Session courses are the equivalents of regular session courses. In addition, non-credit courses are

TABLE 10. SUMMER SESSION ENROLMENTS

YEAR	CREDIT COURSES	NON-CREDIT COURSES	TOTAL
1956	1,804	N/A	1,810
1957	3,507	860	4,367
1958	3,954	732	4,686
1959	3,754	729	4,483
1960	4,306	1,027	5,333
1961	5,156	979	6,135
1962	5,101	1,119	6,220

conducted during Summer Session through the Department of University Extension. Visiting summer faculty come from several countries to supplement those from the University faculty. During the 1962 Summer Session 189 credit courses were offered by a staff of 232 instructors. Table 10 shows the Summer Session enrolments from 1956 to 1961.

The University has always served the whole Province in that it has educated teachers, physicians, lawyers, engineers, etc., who have worked in all our communities. In a more direct way, moreover, it has served all areas through the Department of University Extension.

In its 25 years of existence, this Department has extended the work of the University in almost every area of its operation. Credit courses—by lecture and by correspondence—non-credit courses, short courses, conferences, workshops, and individual lectures have been offered in virtually every area of the Province. Last year, for example, 2,379 people took credit courses, 6,533 took non-credit courses, nearly 10,000 participated in short courses and conferences, and well over 100,000 attended lectures and talks. The range of subjects taught and discussed has been very great indeed. Courses and lectures have been given in fine arts, investment, religion, poultry husbandry, labour law, education, home economics, medicine, foreign languages, psychology, pharmacy, and dozens of other subjects.

Affiliated Colleges. Three types of institutions are affiliated with the University of British Columbia. Victoria College has

direct affiliation in that the courses in Arts and Science and Education taken at the College are accepted for full credit toward a University of British Columbia degree. The other affiliated institutions are the theological colleges which occupy land that was reserved for several denominations when the University site was granted. The Anglican College and Union College provide courses leading to their own theological degrees. St. Mark's College, St. Andrew's Hall, and Carey Hall are residential colleges only.

The affiliated colleges are administratively separate from the University, although those providing instruction are represented on the University Senate by their principals, and in the case of Victoria College by two additional faculty members. It follows that affiliation is limited, and the terms differ for different institutions.

The University also grants credit for equivalent courses to students of good standing from other universities and non-affiliated colleges. Such credit is granted on an individual basis depending upon the nature of the courses taken and the standards which the students have attained.

VICTORIA COLLEGE. Victoria College offers courses leading to degrees in Arts, Science, and Education, and the first year of Commerce and Business Administration. Courses preparatory to Medicine, Dentistry, Law, Architecture, etc., may be taken at the College. The requirements for admission to the College and the College fees have been the same as those for the University of British Columbia. Students at Victoria College qualify for University of British Columbia degrees, in that Victoria College conforms to the regulations of the University of British Columbia.

The College occupies two sites, and plans for the development of the more recent of these, the Gordon Head Campus of 258 acres, are already well advanced.

To keep pace with the growth and expansion of Victoria College, its library has undertaken an accelerated programme of development and service. By the spring of 1962, the book collection totalled approximately 90,000 volumes and was

growing at the rate of about 20,000 volumes annually. The library regularly receives some 850 periodicals.

The College also operates a Summer Session like that at the University of British Columbia. There is also an Evening Division for the benefit of adults who are not able to attend the regular day session. In addition to the regular credit courses, the Evening Division offers a limited number of non-credit courses.

Following are the registrations in each of the faculties for 1961-62.

Faculty of Arts and Science	1,085
Faculty of Commerce and Business Administration	19
Faculty of Education	631
Unclassified	4
GRAND TOTAL	1,739
Summer Session, 1961, Credit Courses	817
Summer Session, 1961, Non-Credit Courses	97

Registration figures for 1962-63 indicate a total enrolment of 1,849 students.

It will be seen that the 1961-62 registration in the Faculty of Education much more closely approximates that of the Faculty of Arts and Science than is the case at the University of British Columbia. Whereas the enrolment in Arts and Science at Victoria College is equal to about 17 per cent of the enrolment in Arts and Science at the University of British Columbia, the enrolment in Education in the College is about 27 per cent of the enrolment in Education at the University. Greater Victoria provides approximately 74 per cent of the College enrolment in Arts and Science, 40 per cent of Education, and 61 per cent of the total enrolment. The size of these percentages is affected by the agreement between Victoria College and the Greater Victoria Board of School Trustees that no senior matriculation (Grade XIII) classes are provided in the Victoria high schools. The percentages coming

from other parts of Vancouver Island are 17 per cent in Arts and Science, 21 per cent in Education and 19 per cent of the total enrolment. The remaining 20 per cent of the enrolment is widely scattered throughout the Province with the Trail-Rossland and the Okanagan districts providing the largest numbers. Very few students from Greater Vancouver and the Lower Mainland attend Victoria College. Whereas the mainland of British Columbia provides only approximately seven per cent of the enrolment in Arts and Science at Victoria College, the same areas provide 42 per cent of the enrolment in Education.

NOTRE DAME UNIVERSITY COLLEGE, NELSON, B.C.

Notre Dame University College was established at the Grade XIII level by the Bishop of Nelson in 1950 with an enrolment of 12 students. The following year, with the enrolment doubled, the College became affiliated as a junior college with Gonzaga University, Spokane, Washington, and a second year of Arts and Science was introduced. In 1954 classroom and residence buildings were constructed to replace the improvised premises that were occupied up to that time. Weekend labour by students and faculty assisted in the construction. Further construction was carried out in 1958 and 1961. The College has residential accommodation for 168 men and 96 women. Following the affiliation with St. Francis Xavier University, Antigonish, Nova Scotia, in 1961, third and fourth year courses were added. Enrolment in 1962-63 totalled 231 students, distributed as follows: Kootenays 40 per cent, Okanagan 15 per cent, Greater Vancouver ten per cent, Victoria and up Coast three per cent, Cariboo and Northern two per cent (total B.C. 70 per cent), Alberta and Saskatchewan 18 per cent (total Canada 88 per cent), United States ten per cent, other foreign two per cent.

The minimal academic qualification for entrance is high school graduation in the University programme of the Province of British Columbia or the equivalent. Students of any religious faith are admitted. In Arts and Science, the requirements for general B.A. and B.Sc. degrees are set in accordance with those of St. Francis Xavier University. The curriculum

covers the principal fields of the liberal arts, the social sciences, and the natural and physical sciences. The equivalent of the first two years of the St. Francis Xavier Bachelor of Commerce course is offered. A two-year terminal programme preparing teachers for positions in Catholic elementary schools is given. The first year of this course comprises a full first year of Arts and Science plus an introductory course in Education and in observation and practice teaching. The second year is given over largely to methods courses and practice teaching, with supporting courses in psychology, philosophy, mathematics, and English. Each student spends not less than 55 days a year in observation and practice teaching. A two-year terminal course in secretarial training, either medical or general, is offered which combines appropriate Arts and Science courses with secretarial courses.

PRINCE GEORGE COLLEGE, PRINCE GEORGE, B.C. Commencing in October, 1962, with an approximate enrolment of 16 students, Prince George College offers Grade XIII and in 1963 intends to offer a year beyond Grade XIII. The College was founded by Bishop O'Grady, O.M.I., D.D., and the Board of Advisers is composed of men and women of all denominations. Students of any faith are admitted who have obtained an average mark of 60 per cent in the B.C. Junior Matriculation University Entrance Programme or its equivalent. Until such time as all available facilities will be required by college classes, high school classes will be accommodated on the campus.

TRINITY JUNIOR COLLEGE, LANGLEY. Trinity Junior College opened with an enrolment of 17 students in 1962 and a faculty of seven members. The College is controlled by a Governing Board of nine, who are members of the Board of Education of the Evangelical Free Church of America. "The underlying purpose in its establishment is to provide particularly for its constituency the first two years of college education in the Arts and Sciences, with emphasis upon the Christian theistic view of the world and of man as central and furnishing a guiding perspective in all learning."*

*Trinity Junior College Calendar 1962-63.

The general academic qualification for admission is high school graduation (University Programme) British Columbia or its equivalent. A chapel-library building has been constructed, and dormitory accommodation is available for 60 students.

It will be seen from the above that of the total number of students enrolled in institutions of higher education in British Columbia, 86.6 per cent attend the University of British Columbia, 11.6 per cent attend Victoria College, and the remaining 1.8 per cent attend the other institutions.

This report is necessarily concerned with *public* education. I would not presume to make proposals about the role or future of colleges which have been designedly set up as private institutions. Some of the greatest universities in the world are private. They have become great because they are free to meet the special demands and beliefs of their founders and supporters. They have been able to restrict their enrolments to an extent and in ways which no public university could accept. They are, by definition and foundation, outside the realm of the public system. Our tradition of education in British Columbia, at all levels, has involved the separation of public and private systems. As a result, both have been able to accept their respective responsibilities. I think that our tradition has worked in the past, and I see no reason to depart from it.

The British Columbia Institute of Technology in Burnaby is intended to serve the needs of the whole Province. Its goals and programme are still in their formative stage, and therefore it is not being dealt with in this report.

Depending on its character as it is developed, it may or may not be wise to include it within the framework of public higher education as defined subsequently in this study.

Future development in the field of higher education cannot be planned realistically without an adequate knowledge of existing circumstances. I have endeavoured to present these circumstances in the description and analysis of institutions which already exist. In major developments of this sort, uninformed proposals are not enough for a sound and sensible expansion of an educational system. Sporadic growth would lead to a confused and uneconomic result. It is imperative

that we view the whole situation in proper perspective, in order that we may reach wise decisions, understood by and acceptable to the people of this Province. Moreover, one of the considerations that has been uppermost in my mind in the preparation of this report has been the need to provide higher educational facilities on an equal basis throughout the Province wherever possible. This ideal may not be fully achieved; but the opportunity should be made available for every suitably qualified young person of this Province to acquire the intellectual skills which are necessary, both for his own future and the future prosperity of this Province. At the same time, the current and future demand for persons trained to the most advanced levels in the academic field cannot be met if the University of British Columbia becomes inundated by the numbers of students I have previously indicated. Provision of facilities at a comparable level elsewhere in the Province will not only equalize educational opportunity but at the same time will enhance the academic standard of the provincial University, and so permit it to pursue the goals recognized everywhere as those of a leading university.

In the rest of this report I shall consider the kinds of new institutions required and their location; agencies to provide for the equitable and appropriate use of public funds for higher education, and at the same time, to ensure acceptable academic standards throughout the whole system; and finally the financial implications of decentralization.

Kinds of Educational Institutions Required

IT WILL BE CLEAR from the preceding section that the resources available for higher education in this Province have been concentrated on two main objectives: the development of the University of British Columbia at West Point Grey as an institution for students proceeding to degrees in the liberal arts, the sciences, the professions, and post-graduate studies; and the development of Victoria College, first as a two-year institution and within the last three years as a four-year liberal arts college giving the degrees of the University of British Columbia. Elsewhere in this report, I have already indicated the growing concern about the number of students to be educated. And yet, as I have stated, we have been and still are educating too few of the suitably qualified students in the college-age group who could benefit by education beyond the high-school level, if we wish to maintain our cultural and economic status. Rather, the problem is to provide for a larger proportion of able young people, but at the same time to avoid undesirable congestion in the present institutions.

The tremendous increase in the numbers of students since the end of World War II merely emphasizes problems that

have been apparent for some time in Canada, especially in British Columbia. The primary schools and the secondary schools of the Province have already experienced a bulge. The question to be posed now is this: what kinds of higher education should be made available, in which institutions, and how should students be selected for the various kinds of institutions which may be proposed?

Though there is evidence of change, our educational system continues to perpetuate a division on a quite arbitrary basis. Most people receive elementary education, some go on to high school, and a few continue to university, but very few indeed obtain graduate degrees. In the past, it has been relatively easy to state which particular tasks in society demand a certain level of education, and the distinctions between manual, clerical, and professional occupations were relatively clear and sharp. Now, however, our occupations are much more varied and complex. In modern society the demand for trained persons has become progressively more urgent. Doctors need medical technologists with more training than high school can provide; scientists and engineers need technicians; business needs data processors and persons who can understand and use complex schedules of time and quantities. Manual labour—the kind that could be performed by practically all workers—is diminishing. Farmers need to know something of marketing, food processing, genetics, costing methods, and so forth. Mechanics—who were virtually non-existent a century ago—must be trained to handle the most delicate and intricate pieces of machinery, and indeed they must be prepared to relearn part of their job whenever new equipment appears. The cliché that learning should be a life-long process is now becoming a cold fact of economic survival. Continuing education is of greater importance than it has ever been in the past, because the individual must adapt his life and his work to the very rapid changes which are taking place.

Young people and their parents are more than ever aware that occupational opportunities depend upon advanced training. Yet our basic educational system is still much as it was some fifty years ago. For example, only now are we developing

an institute of technology in British Columbia. We continue to maintain our traditional institutions of primary school, high school and university; and in general we offer students leaving high school a college curriculum leading to a degree, or nothing. In short, there is a great void in our educational system in British Columbia and in much of Canada. We need a whole set of educational opportunities beyond high school to fill society's need for a complex and constantly changing range of twentieth century technologies.

When we examine critically what happens to students who enrol for higher education, we must seriously question our traditional institutions and their methods. At the University of British Columbia, approximately 40 per cent of the freshmen do not return for the second year, and another 10 per cent do not return for the third year. Fewer than 50 per cent of the students who enrol as freshmen obtain a university degree. Hence, it is evident that some of the students who come to the University are, in one way or another, unsuited for university studies. Some may not intend to take degrees; others may not find what they want at the University; some may be incapable of undertaking a university programme; others may have the ability but not be ready for independent study when they arrive at university. All, however, have proved themselves reasonable students in high school. All have chosen to continue some form of further education. It is certain that they would benefit themselves and the community in which they live by obtaining further education suitable to their interests, talents, and aptitudes. And yet, by and large, we offer them academic education or nothing.

The presence at the University of substantial numbers of unsuccessful students constitutes a waste of time and money. But what is more serious, these students tend to hold back others who are eager and able to progress. The rate of progress and the level of instruction are influenced, sometimes consciously and sometimes subtly, by the presence of students who are not academically inclined. This situation can distort the aims of the University. The University of British Columbia has no entrance examinations of its own. By agreement with

the Department of Education, the University accepts high-school graduation (university programme) as a minimal requirement for admission to the University. It does not necessarily follow that what is required of a student to obtain a high school certificate on the university programme should be the requirement for entry to the University. The high schools of this province have a dual function: they not only provide training for students who are preparing for positions in society which require high school graduation as a basic qualification, they also prepare students for entry to the University. It is, therefore, wasteful to accept students as qualified for university only to fail a large proportion of them at the end of the first or second year. Such students devote a year of their time and their money to discovering that they are neither suited for nor interested in a university education. Surely such students would be better served by an institute of higher educational offering courses suited to their needs.

I see the need for two basic kinds of institutions of higher education:

1. Universities and four-year colleges offering degree programmes and advanced training for those students who have the necessary ability and aptitude.
2. Two-year colleges offering a variety of programmes of one or two years of education beyond Grade XII.

To combine the ideal of providing suitable higher education for all students who can benefit from it with the ideal of equality of opportunity for all students throughout the Province wherever possible, provision must be made in two-year colleges for those students who want to transfer to a four-year college or a university later on. A two-year college, therefore, might be designed for those students who plan to continue their education at a degree-granting institution; those who wish to take only one or two years of higher education—technical, academic, or a combination of both; those who are undecided about their educational futures; those who by preference or for financial reasons wish to remain in their own locality.

Although each of these two-year colleges would have to de-

sign its programme to meet the requirements of the area in which it is located, the objectives of two-year colleges might include one or more of the following: (a) two-year academic programmes for students who will either transfer to degree-granting institutions or will complete their formal education at this level; (b) technological and semi-professional courses designed for students who want formal education beyond high school but who do not plan to complete the requirements for a degree; (c) adult education, including re-education to meet the changing demands of technical and semi-professional occupations. (Figure 3).

The two-year college would be a new kind of institution for British Columbia. It would have its unique character and ideals, and offer enough courses parallel with those of degree-granting institutions to enable the best students to pursue further studies. If such institutions are set up, the aims and functions of the degree-granting institutions will become clearer.

Although I expect two-year colleges to differ from one another in accordance with local needs, I believe that the differences will exist mainly in the non-academic areas of their work. Such institutions could attract very able students and professors by offering courses and facilities of distinctive character: seminar education, small classes, interdisciplinary studies, close personal contact between professor and student, promotion based principally on accomplishment in teaching, and so forth.

It would be unfortunate, I think, if the proposed two-year colleges merely tried to duplicate the schedules, faculty, courses, and organization prevailing at the University. Their academic programmes must be parallel so that the best students can transfer to university, but *parallel* should not mean *identical*. I suggest, for example, that the staff will be somewhat different in kind from those at the University, where we normally expect a member of faculty to devote a significant part of his time to research and the advancement of his professional field. The staff for the academic programmes in the two-year colleges should have at least the equivalent of an honours degree or a graduate degree in the subject they are

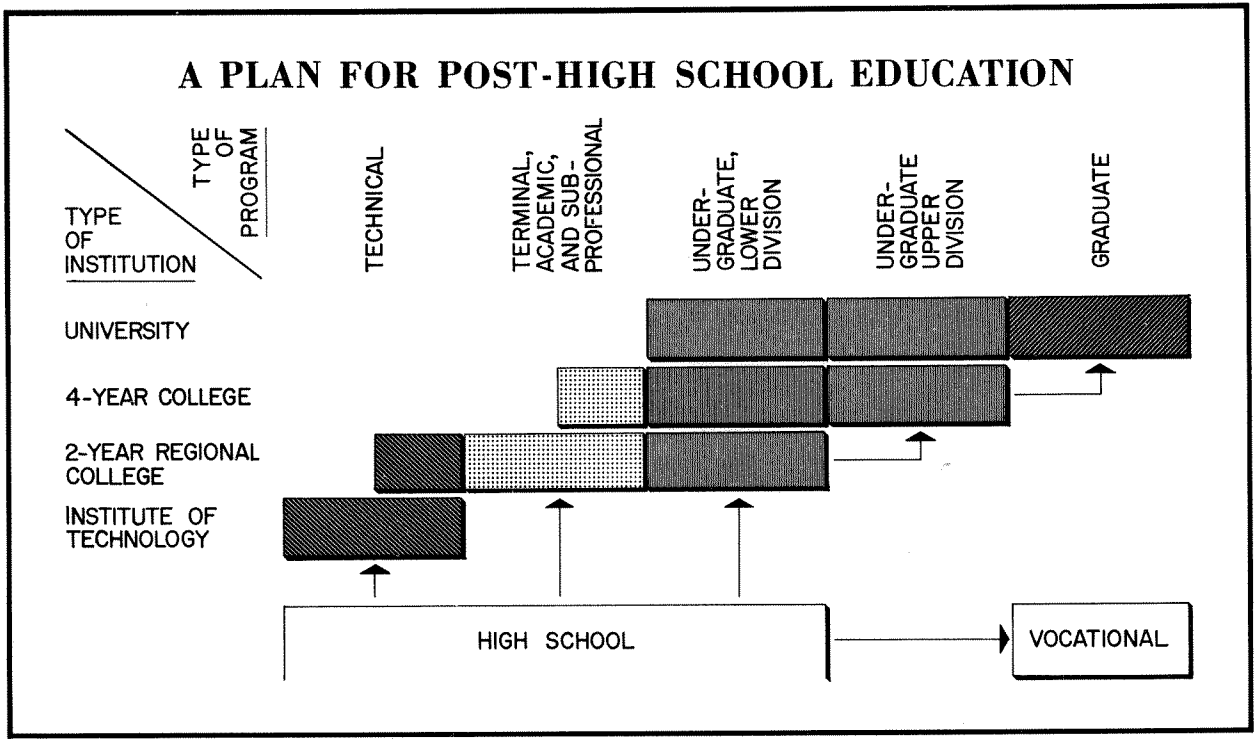
A PLAN FOR POST-HIGH SCHOOL EDUCATION
TYPE OF PROGRAM
TYPE OF INSTITUTION
TECHNICAL
TERMINAL, ACADEMIC, AND SUB-PROFESSIONAL
UNDER-GRADUATE, LOWER DIVISION
UNDER-GRADUATE UPPER DIVISION
GRADUATE
UNIVERSITY
4-YEAR COLLEGE
2-YEAR REGIONAL COLLEGE
INSTITUTE OF TECHNOLOGY
HIGH SCHOOL
VOCATIONAL

FIGURE 3

teaching. But whereas the University emphasizes research and the ability to supervise graduate work, I would expect the two-year college to emphasize teaching ability and community service.

The organization of the courses might well be very different in the two-year college. I can see merit, for example, in organizing the college on the quarter or the semester system. On the quarter system, it would offer four quarters of work, each complete in itself, and the normal student year would consist of three quarters. Such an organization has great advantages. First, it provides a longer academic year for students who may not move quite so rapidly as those at university. Second, it provides for ready transfer from one programme to another without serious loss of time. Third, if any three quarters make up an academic year, students can find vacation work at varying times during the year and thus avoid the present situation in which all students compete for summer jobs. Fourth, it provides for more efficient and economical use of buildings and facilities.

When I say that courses should be parallel but not identical, I am envisaging some flexibility in the university entrance and prerequisite requirements. For example, we will want to know that the student is competent in the study of English literature, not that he has studied particular, prescribed texts. Of necessity, the elementary science courses are likely to resemble one another, but even in these, local emphasis may well be different. It is true that the syllabus in an elementary course should be designed around the fundamental principles of the subject, but faculties tend to work best when they are permitted some latitude to exercise their own initiative.

At the present time we require two kinds of degree-granting institutions in British Columbia. We need the University concentrating on (1) undergraduate education in the humanities, the sciences, the fine arts and the social sciences; (2) advanced teaching and research connected with graduate work, and (3) professional preparation, for example, in medicine, dentistry, engineering, law, pharmacy, forestry, commerce, and education. In addition, we need four-year colleges offering degrees

in the liberal arts, science, and education. In the more distant future as our population grows, it may be that some of the four-year colleges will develop into comprehensive universities. For the time being, however, I see no need for more than one institution giving the extremely expensive courses such as medicine, engineering, and much of the advanced scientific and graduate work. Currently, it costs at least $5,000 a year to educate a medical student. Consequently it will be many years before our population and resources justify more than one medical school in this Province.

In all that I have said, I am not suggesting that one kind of institution is academically superior to another. They have different functions to perform. There is nothing to prevent any institution attaining a high standard of excellence consistent with its aims and goals. The University will be different from but complementary to the four-year colleges and the two-year institutions. All will have an important place in our system of higher education. To insist that each must train young men and women in the same way is to confuse the aims and methods of education. An institution dedicated to the education of theoretical physicists would probably produce very poor primary school teachers, and vice versa. The measure of the excellence and the quality of an institution must be its success in doing what it sets out to do, that is its success in the light of its own aims.

The character of universities everywhere has changed during this century. They have come to place increasing emphasis upon the quality and level of research and scholarly production, and their reputation in the eyes of the academic world depends largely upon this. In other words, they have recognized that their duty to provide new knowledge and to explore the unknown is as important as their duty to propagate existing knowledge. In order that research may be carried out at an appropriate level, there must be a critical mass, to use an image drawn from the sciences. There must be a sufficiently large number of teaching members to provide a sophisticated academic environment. At the same time, the "library of instruments" and books required must be sufficient to enable

graduate students to carry out explorations in fields of their choice. It is no accident that the University of California with its huge graduate school has eleven Nobel Prize winners on its faculty, nine of whom are men who were appointed as assistant professors and who carried out their major work in California.

Universities must provide a stimulating intellectual atmosphere in which the most able scholars can carry out their teaching and research. To meet the unprecedented demand for new faculty to staff the additional institutions here and elsewhere, Canada must begin to reproduce herself academically. The training of the university professor may take six to nine years following high school graduation, and the Ph.D. degree or equivalent is now almost mandatory in most fields of university education. In addition to providing the kind of intellectual atmosphere in which the productive scholar can flourish, it must be pointed out that this kind of programme is demanding in terms of the money required to provide the facilities and equipment necessary.

It has been stated frequently in the past that one of the methods that might be used for alleviating pressure in the first year of university would be to encourage students to complete senior matriculation and then go directly into second-year Arts and Science or first-year Engineering. Grade XIII is well developed in some areas of the Province, and it provides a very useful service for students to complete their secondary schooling. It is also true that Grade XIII is a qualification for entry into certain sub-professional positions in society. Yet the academic environment of Grade XIII is not the same as that of a university, and it is only moderately suitable as the equivalent of first-year university. The number of course options that can be made available to the student is necessarily restricted, and the instructional methods are largely those of a high school system rather than a university. In brief, Grade XIII should be looked upon as the continuation of high school and not academically the same as the first year of university.

In summary, I recommend that, in addition to existing institutions of higher education, there be established one new

four-year degree-granting college, and in addition two-year regional colleges located at those places which will serve the largest number of young people of the Province. In the next section of this report, I shall consider the problem of selecting the most suitable locations. Naturally many areas desire an institution located within their region; and during my visits throughout the Province, I have been impressed by the keen interest displayed by local groups. Nevertheless, in considering the welfare of the whole Province, decisions must be reached with full knowledge of the fact that some communities will feel disappointed over the immediate outcome.

Locations for Colleges in British Columbia

I HAVE ALREADY referred to the figure of 37,000 students who will be seeking post-high school education in 1970, an increase of almost 20,000 over the number in 1962. This dramatic increase may seem unrealistic to some readers and so, before considering the locations of colleges in the Province, I shall examine the methods by which such indications are made and compare the results from several different sources.

The recently completed census of Canada revealed that over one third of Canada's population was under the age of 15 in 1961. During the next decade these young people will be seeking entrance to post-high school educational institutions. Not only is the total number involved greater than ever before in Canada's history, but the proportion of the total who want and should have educational facilities available to them is also steadily rising. In order to measure the challenge of these conditions, several authorities have prepared projections of the numbers involved; and, although their conclusions are not identical, it may be seen from Table 11 that they are all of the same order of magnitude.

The first three are arrived at by projecting a Provincial total pool (e.g., 18-21 year age-group or Grade XII enrolment)

TABLE 11. PROJECTIONS OF UNIVERSITY AND COLLEGE ENROLMENT IN BRITISH COLUMBIA

	METHOD I	METHOD II	METHOD III	METHOD IV
1965-66	23,000	24,900	24,300	22,700
1971-72	39,200	34,800	37,000	Low 34,000
				High 40,000

Method I. E. F. Sheffield, 1961. Based upon projection of current trend, relating British Columbia enrolment to the enrolment of the whole of Canada.

Method II. Chant Commission Report. Based upon projection of college enrolment in relation to Grade XII enrolment.

Method III. R. J. Rowan and J. Halpern, *A Report on the Problem of Higher Education in British Columbia*, 1962. Based upon projected rate of increase of 0.8 per cent per year of the proportion of the 18-21 age-group enrolled in college.

Method IV. J. D. Chapman and W. G. Hardwick. Based upon projection of college enrolment as a proportion of Grade 7 (1959-60) and Grade 2 (1959-60) on a regional basis. (See Appendix E)

---

while the fourth is an aggregate or regional projections derived from 1959-60 Grade VII and Grade II enrolments.

The figures in Table 11 represent the projected total enrolment in all forms of post-high school institutions and Grade XIII, and, therefore, include the numbers in all undergraduate years as well as those in graduate studies. Other tables included in this report refer to projections of only one portion of this total figure, namely first-year enrolment. Naturally in any one year this figure is considerably less than the total and represents the number of students entering post-high school education for the first time.

Table 11 indicates that by 1965-66 in British Columbia there will be some 24,000 students continuing their education beyond high school. If by that time no additional facilities

have been made available, these students will be distributed roughly as follows: 19,000 at the University of British Columbia, 3,000 at Victoria College, and 2,000 in senior matriculation. By 1971 a total of 37,000 students will continue their academic education beyond high school. If no new institutions have been established by that time, it is estimated that 27,700 of these will enrol in the University of British Columbia, 4,000 in Victoria College, and the remainder will attend senior matriculation classes in the high schools of the Province. Such a massing of students on the Point Grey Campus would create a situation that would critically distort the whole structure of the University, and it could not possibly be in the best interests of higher education.

I am convinced that such a situation would be an educational disaster for the Province of British Columbia. Even now our facilities are taxed to the utmost, and, although we realize that further expansion will be unavoidable, the possibility of accommodating close to 30,000 students on the Point Grey Campus is beyond reasonable acceptance. Yet, unless other facilities are made available immediately, such a possibility is inescapable. Otherwise, thousands of very able and deserving young men and women of this Province will be deprived of higher education.

In view of all the evidence we are drawn to the inevitable conclusion that the interests of the students, the people of the Province, and the University will be served best by decentralization to provide higher education for the 37,000 prospective students.

In order that I might make recommendations about the locations of new colleges, it was necessary for me to acquaint myself with the possibilities available in the different parts of the Province and to consider the general principles upon which such decisions might be made. I visited a number of representative communities throughout the Province. During these visits I was privileged to discuss a plan for decentralization with the local school boards, members of the Chamber of Commerce, Alumni of the University of British Columbia, and other persons interested in the development of higher

education. In essence, however, my contacts were directly with local school boards, since the present Public Schools Act identifies them as the agencies which would make representations to the Council of Public Instruction for the establishment of any regional colleges. During my visits I met with ready co-operation and cordiality which enabled me to obtain important and useful information for the preparation of this report. I was invariably impressed by intense local interest in the early establishment of colleges, either in a preferred city or town, or through co-operation on a regional basis.

As the result of my discussions with those concerned with the development of post-high school education in the various centres of the province and in the light of experience in other parts of Canada and the U.S.A., it became clear that there are several important criteria which should help us to decide upon the location of new colleges. These are:

(a) the total population of the area concerned;
(b) the size of the "student pool" within this total;
(c) the number of students within commuting distance of a particular centre;
(d) the proportion of this number which seems likely to need post-high school education;
(e) the existing level and quality of cultural activities.

The most direct approach is to begin with a survey of those areas within the Province which have a concentration of population sufficient to warrant the establishment of an institution. It was therefore necessary to seek communities having a fairly high density of population to act as centres, and to which would be added students residing within one hour's travel by car. Consideration was given also to the population growth which is likely to occur in the chosen area, not only by natural increase, but also by in-migration. A further guide to possible locations was the registrations in Grade XIII at certain centres, and the number of students from those centres attending the University in the first and second years.

A programme of decentralization of higher education in British Columbia must be planned so that new institutions will be assured of enough students to carry on a fairly compre-

hensive course of studies. "A potential enrolment of 400 full time students at the end of five years would appear to be necessary to provide adequate breadth of programme for a two-year college," expresses the considered opinion of authorities on two-year colleges in the United States.[1] Minimum starting enrolment must be about 300 students in a two-year programme. Most communities in British Columbia are not sufficiently large to supply a pool of qualified students and those that are large enough owe it to their smaller neighbouring communities to co-operate in a regional college programme.

Interest in higher education and in cultural activities which have already been demonstrated by citizens in certain communities provides further evidence regarding possible locations. These interests are reflected in the size of the local library, the quality of offerings in adult education, theatre, music, and fine arts.

Any local considerations must be seen in the broad perspective of the added benefits that can accrue to the citizens of the Province at large. These new colleges are expected to flourish and grow to meet the changing demands and requirements of higher education in the various regions of the Province. In this respect the regional college will act as a leaven in the community. It will foster and promote higher education and cultural activities among the students who are in attendance, and at the same time it will provide an opportunity for continuing education among interested citizens in a changing society. Thus I foresee an enhancement of the cultural and educational status of the whole Province.

The existence of a regional college will, I am certain, encourage able young men and women to go and take additional education. They might be denied this opportunity if they were obliged to reside at an institution remote from their homes. In even broader terms, the dispersal of institutions of higher education will contribute markedly to raising the whole intellectual and cultual life of the citizens of British Columbia. With the establishment of such institutions, I would expect a new ferment and activity in higher education which would reach out its beneficial effects to all citizens of this Province.

TABLE 12. TOTAL STUDENT POOL FROM WHICH FIRST-YEAR STUDENTS WILL BE DRAWN

REGION	ACTUAL 1961	PROJECTED 1965	1971
Vancouver—Lower Fraser Valley	11,270	17,200	18,200
Victoria—Vancouver Island	3,272	4,800	5,200
Okanagan	1,851	2,500	2,600
Kootenays	1,561	2,100	2,100
South Cariboo	737	1,300	1,600
Central Interior	754	1,200	1,700
Coast	1,042	1,500	1,800
Peace River and North	437	800	1,100
TOTAL	20,924	31,400	34,300

In order to determine the regional distribution of population and the "student pool," I asked several of my colleagues at the University of British Columbia to prepare information from the recent census and other available records, so that I might identify the regions in the province where the need for new colleges was the greatest and the centres at which these needs might be best met. Table 12 sets down the results of these studies in terms of actual total population and "student pool" in 1961 and projected student pool for 1965 and 1971.*

It is immediately clear that Vancouver and the Lower Fraser Valley, with over half of the population of the Province, is the dominant population concentration. Furthermore, while it is clearly the area with the most well-developed post-high school education facilities, it is also the area with the largest and most varied needs. Greater Victoria, with 183,000 population, is in a class which lies between the complex Vancouver-Lower Fraser Valley area and the other regions of the Province. It is larger than the next three regions (the Okanagan, the Kootenays, and Central Vancouver Island) which in-

*See Appendix E, Methods Used for Projecting Enrolments.

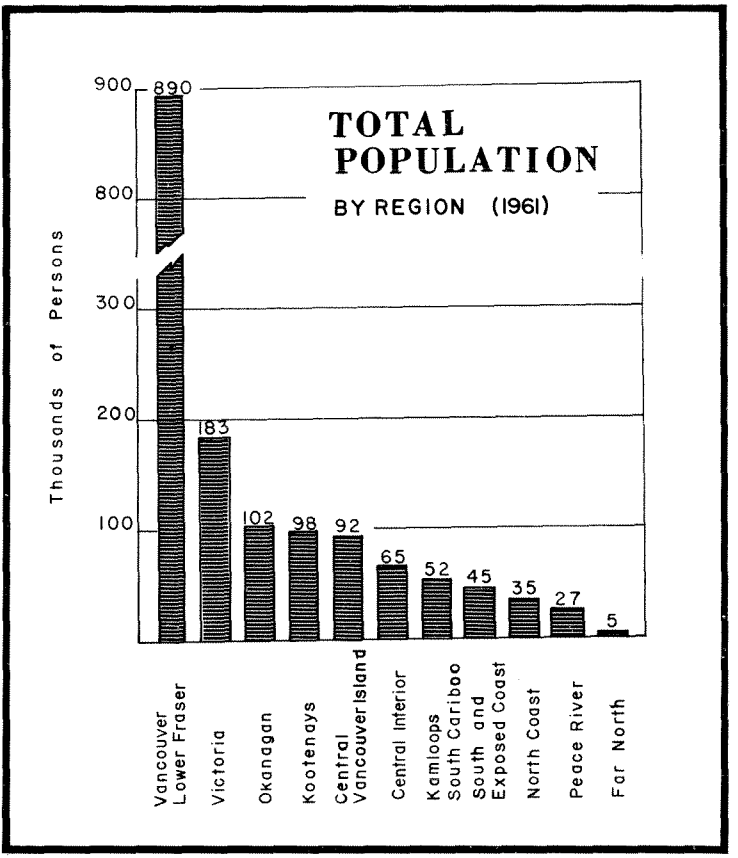

FIGURE 4

clude only some 100,000 each. These three are all characterized by a greater dispersion of population but with several individual centres. In the remaining regions of the Province there are fewer people, even more widely dispersed, and with their cultural and economic activity focussed more or less on one centre only. (Figure 4).

VANCOUVER AND THE LOWER FRASER VALLEY. The Lower Fraser Valley, with the largest concentration of population in the Province, becomes the focus of the University of British Columbia. However, the University on the Point Grey

site was not established to give maximum accessibility to people living in the Fraser Valley. In a day when travel habits were very different, the site on the westernmost tip of the region gave proximity to the residents of Vancouver. Students from nearby municipalities have had to leave home and move on or near the Point Grey Campus to get college training.

In the past fifteen years major changes have taken place in the Lower Fraser Valley region. The population has increased markedly and high population densities, once only characteristic of Vancouver city, have spread eastward into the western Lower Fraser Valley municipalities. Individual mobility has increased in terms of the widespread use of the motor vehicle, and the proportion of the population demanding higher education has risen. All three forces have stimulated a rapid expansion in the number of students having access and demanding entrance to the Point Grey Campus.

Over sixty per cent of the provincial pool seeking education in the coming decade will come from this region. If the University is to stabilize its population, which I have argued earlier to be a provincial necessity, then potential students from this region will have to be housed elsewhere than on the Point Grey Campus.

With these facts in mind, how can the needs of students in Vancouver and the Lower Fraser Valley be served? Population is growing at an average rate of nearly four per cent per year in this region. However, there are considerable area variations in rates of growth. Between 1941 and 1961 Vancouver city's population remained relatively stable, while the adjacent municipalities in the western Lower Fraser Valley grew rapidly. On the other hand, the predominantly agricultural municipalities in the eastern Lower Fraser Valley have grown slowly. If present trends continue, the municipalities of the western Lower Fraser Valley such as Burnaby, Surrey, Coquitlam, and Langley will exceed the total population of Vancouver, West Vancouver, and Richmond within a decade. (Figure 5).

A new four-year college will be required immediately to serve the growing population of the western Lower Fraser

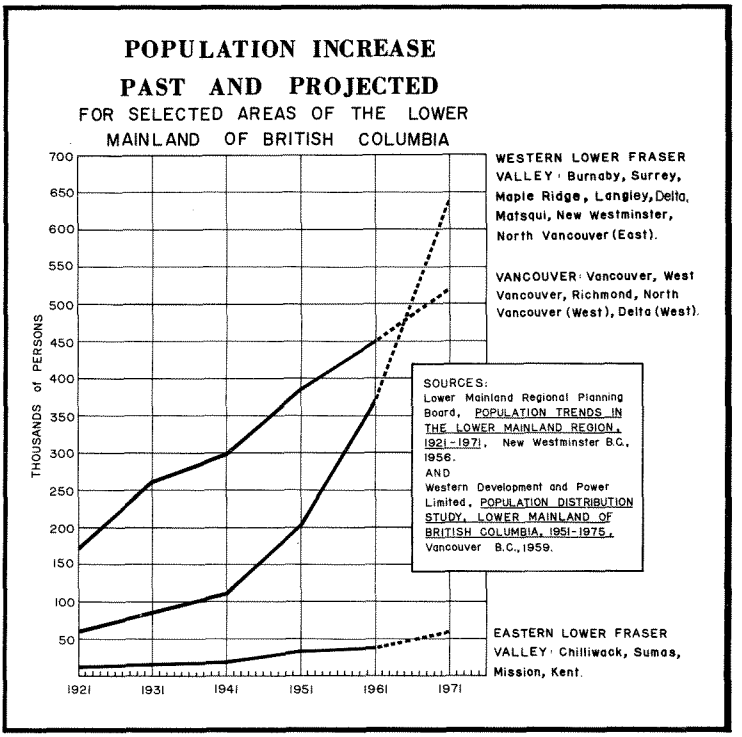

FIGURE 5

Valley, an area not within easy commuting distance of the Point Grey Campus. This institution, and this institution alone, can most effectively alleviate the demand for undergraduate education on the Point Grey Campus. If a suitable location can be selected, this institution could command a freshman enrolment of 2,000 in 1965 and reach an enrolment of about 7,000 in the four-year programme by 1971. A college in this area will be well suited to a vigorous college programme along with extensive programmes of adult education.

The college should be located on the new Trans-Canada freeway near the Stormont Interchange. See Figure 6. Such a site would serve as a "least-aggregate-travel-time" point for those neighbourhoods most inaccessible to the present campus. This site would be equally accessible by automobile to those

students from North Vancouver, Surrey, and Langley municipalities. Such a college-site would be as convenient (in travel time) for students living in these municipalities as the Point Grey Campus is to persons living in the central sections of Vancouver city.

A site further to the west would serve new areas of Vancouver and West Vancouver but would increase travel time from Lower Fraser Valley centres. On the other hand a site further to the east would serve the Lower Fraser Valley better but would increase travel time from densely populated sections of North Vancouver and Burnaby. Several desirable sites containing over 250 acres exist in this area, including the Department of Veterans' Affairs George Derby Hospital site, and municipally-owned land on Burnaby Mountain.

The Provincial Government has already established the Institute of Technology about two miles west of the Stormont Interchange. This will no doubt meet the needs of these municipalities for technical education, leaving for the four-year college regular academic and adult educational activities.

Two regional two-year colleges will be desirable as well. One should serve Vancouver and the adjacent municipalities, particularly in the field of continuing education, terminal academic education, and transfer facilities for students on the academic programme. It seems apparent that it is the hope of the Vancouver School Board to see the King Edward programmes develop along these lines. The second two-year college should serve the eastern Lower Fraser Valley. Initially much of the region can be served by the four-year college. However, as that institution grows in size, the two-year college will be necessary. Precise location of this college would be determined by the changes in population density in the Lower Fraser Valley over the next decade. The University, the four-year college in the western Lower Fraser Valley, the Institute of Technology and the two, two-year colleges would offer the largest population concentration in the Province a comprehensive programme of post-high school education.

GREATER VICTORIA. The City of Victoria and those adjacent municipalities on the southern tip of Vancouver Is-

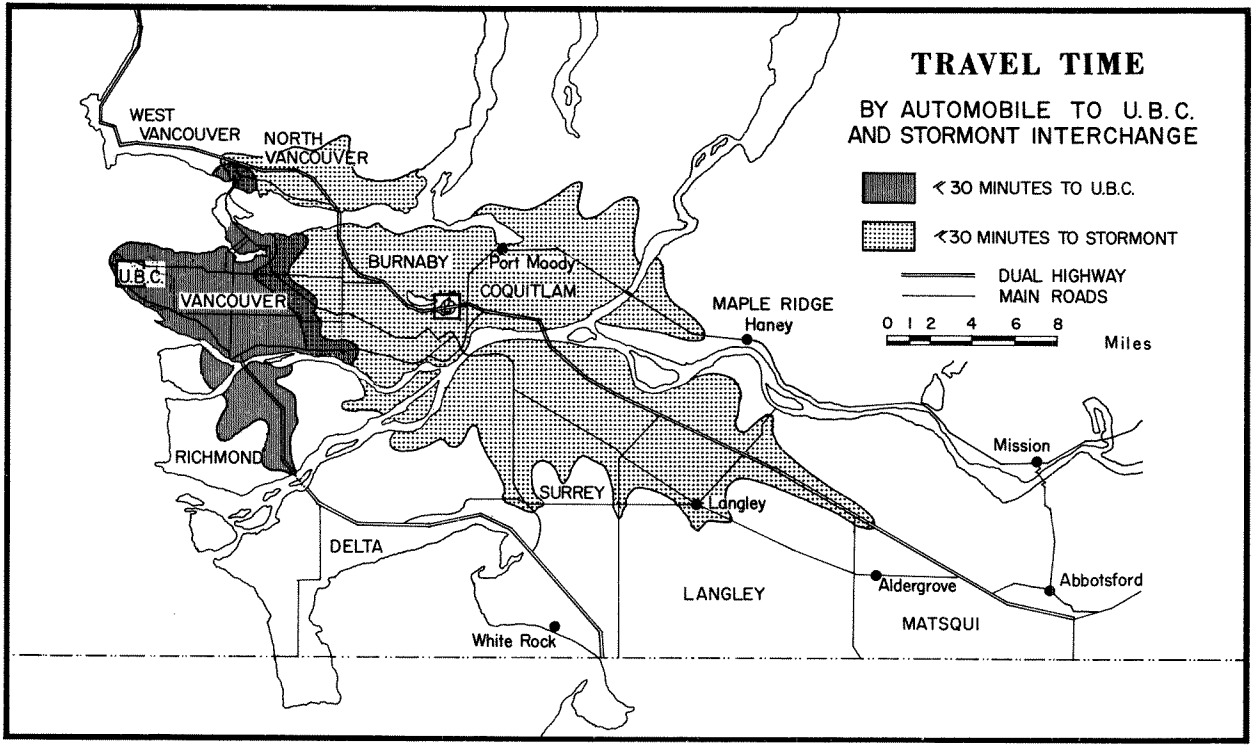
TRAVEL TIME
BY AUTOMOBILE TO U.B.C.
AND STORMONT INTERCHANGE
< 30 MINUTES TO U.B.C.
< 30 MINUTES TO STORMONT
DUAL HIGHWAY
MAIN ROADS
0 1 2 4 6 8
Miles
WEST VANCOUVER
NORTH VANCOUVER
U.B.C.
VANCOUVER
BURNABY
Port Moody
COQUITLAM
MAPLE RIDGE
Haney
RICHMOND
SURREY
Langley
Mission
DELTA
LANGLEY
Aldergrove
Abbotsford
MATSQUI
White Rock

FIGURE 6

land form the second largest concentration of population in the Province, and fittingly already have a four-year college. Although growth in the region will be modest, Victoria College should expect continued growth as more and more students from the coastal regions find it desirable to attend Victoria College for college education. Victoria College can expect as many as 4,000 students by 1971.

Because of the size of the region I foresee the demand on the part of students for the two-year college functions. I believe that other regions of the Province currently without higher education facilities must be assured of new institutions before a comprehensive two-year college in the Victoria area is justified. However, the school boards in Greater Victoria may find it desirable to enter into some agreement with Victoria College to have a limited two-year programme offered, perhaps on the Lansdowne Campus, as the major academic programme is transferred to Gordon Head.

OKANAGAN VALLEY REGION. Although 100,000 people reside in the Okanagan region, they are found on farms and in small cities and towns stretched along 160 miles of Highway 97. Because of the size of the regional population, I feel that it is important that a four-year college programme be available within the Okanagan Valley within the next eight years. Although it could be argued that the Valley could support two, two-year colleges, perhaps at Penticton and Vernon, I believe it desirable both from the standpoint of local interest in high quality education and from needs of the whole Province that the people of the Okanagan unite to establish one two-year college which in a few years will become a four-year Okanagan College.

The location of Okanagan College should follow the same principles of large population pool, accessibility, and local interest that are applied in other regions. The college should therefore be located at a site near Highway 97 on the west side of Okanagan Lake immediately opposite Kelowna. A college here would have a number of advantages. It would lie mid-way between Penticton and Vernon by road and could be reached from either centre in about one hour. Figure 7.

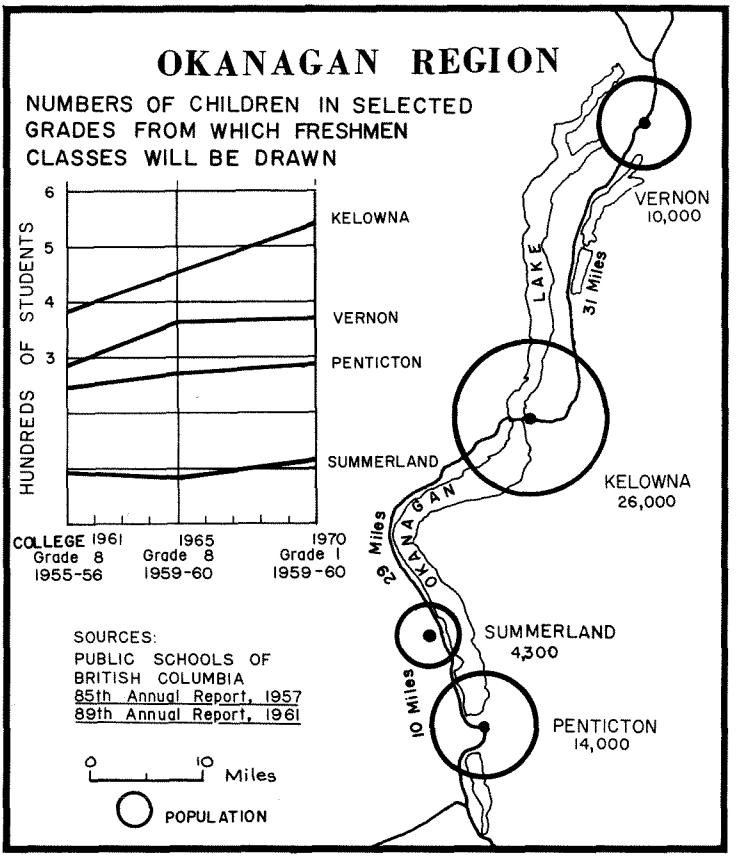

FIGURE 7

It would be tributary to the largest urban region, Kelowna, which, with a population of 26,000, would provide the largest contingent of students. It could offer facilities for adult education and community service to the Kelowna urbanized region, but it should not officially be tied to that city. It would occupy an impressive site overlooking Okanagan Lake.

Sites near Vernon or Penticton would not be centrally located and would not meet the maximum accessibility requirements. Kelowna has been chosen as the site for a Provincial Vocational School. The reasons for this selection—accessi-

bility to the major population concentration, centrality within the valley, reasonably good prospects for continued economic and population growth, and proximity to important urban functions—are similar for an academic college at a site near Kelowna.

In order to serve a wider constituency than falls within commuting distance of this particular region, college residences would extend educational opportunities to large numbers of young people. Residential life has a profound influence upon those who live within halls, and contributes greatly to the whole tone and atmosphere of an academic community. In its initial stages as a two-year college, I visualize limited demand for residences. These will become essential at the time the college becomes a four-year institution. Even from the beginning the college and interested citizens will need to ensure that suitable living accommodation is made available for students who cannot commute on a daily basis.

I would like to commend to the residents of the Okanagan and other regions of the province the enlightened offer of Revelstoke, made in a brief to me: "If Okanagan College is organized, that School District 19 (Revelstoke) should provide on the campus, in conjunction with adjoining school districts, dormitory accommodation for the students of the school district."

THE KOOTENAYS. The pattern of population distribution in the Kootenays is one of dispersion with most people living in small towns separated from one another by rivers or lakes, served by ferries, or mountain passes. However, of the 98,000 persons in the region nearly two-thirds live in the West Kootenay valley between Nelson and Trail. This region provides enough students to various institutions of higher education now to warrant the establishment of a two-year college. Like the Okanagan, the population is not concentrated in one centre, but distributed between several cities and towns. (Figure 8).

The choice of Nelson as the site for Notre Dame University College did not result from maximum accessibility considerations. Although the College has been in existence for over

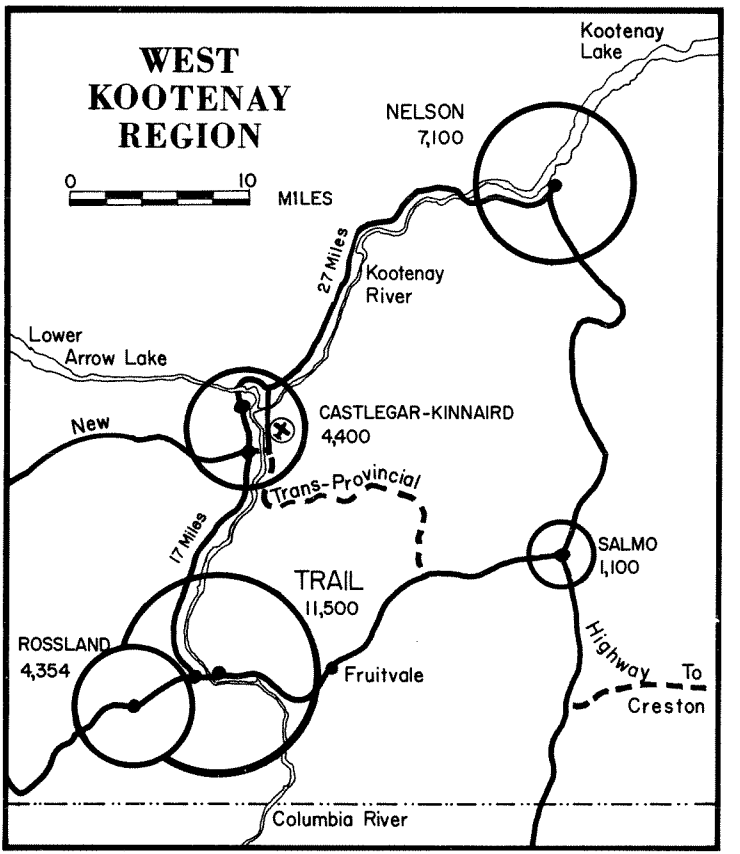

FIGURE 8

a decade, a large number of students from Nelson are enrolled either in Grade XIII or are attending the University of British Columbia or Victoria. Trail has the largest population (11,500), but a college there could not adequately serve the whole valley on a commuting basis. Moreover, as a smelter town on a restricted site, a satisfactory college site might be difficult to secure.

The towns of Castlegar and Kinnaird (1961 combined population 4,500) should be given serious consideration as the site of a West Kootenay regional college. Kinnaird is situated on the Columbia River seventeen miles north of Trail.

It will be the junction of the new Trans-Provincial highway which by-passes the Cascade-Rossland mountain highway to the west and will be linked with Salmo and Creston to the east. With the completion of the new highways, Fruitvale and Salmo may be within commuting distance as well. Although Nelson is within twenty-seven miles of Castlegar, a ferry crossing lengthens the travel time, but construction of the Columbia River bridge will overcome this obstacle. Both Castlegar and Kinnaird have experienced rapid growth in the past five years. Rossland and Trail have remained static. The construction of the Celgar pulpmill at Castlegar has materially strengthened the economy of the region. With possible construction of the Columbia River Treaty Dams, additional population growth may be expected. A two-year Kootenay Regional College at Castlegar could have 500 students in 1965 and 900 students by 1971. Residents of the East Kootenays would have to decide between offering Grade XIII and establishing residential dormitories at the College in Castlegar.

CENTRAL VANCOUVER ISLAND. The Nanaimo, Alberni, and Courtenay areas together have over 90,000 persons. At present students seeking higher education either attend Grade XIII in their home town or attend the University of British Columbia or Victoria College. In total these three centres and their environs could well support a two-year college. However, the distances between the cities are greater than those in either the Okanagan or West Kootenays. A college site might be selected in the vicinity of Parksville or Qualicum, a compromise location which might serve the whole region. However, with the large commuting distances involved and the lower propensity students appear to have for higher education and also because of the relative convenience of Victoria College, I suggest that any development in central Vancouver Island be delayed until other areas of the Province with more pressing needs have established institutions.

CENTRAL INTERIOR. Prince George acts as a focus for a large region extending from Quesnel in the south, McBride in the east, to perhaps Smithers in the west. The city of Prince George is growing rapidly and the numbers of children in

TABLE 13. PROPENSITY FOR HIGHER EDUCATION

First Year-Grade XIII Enrolment
as a Percentage of the Student Pool*

REGION	PERCENTAGE
Vancouver-Lower Fraser Valley	
Vancouver	42
Lower Fraser Valley	25
Greater Victoria	36
Okanagan	26
Kootenays	23
Central Vancouver Island	25
Central Interior	16
Kamloops-South Cariboo	
Kamloops	38
Peripheral	4
Other Regions	13

* Enrolment: UBC, Victoria College, and Grade XIII (1961-62); Student Pool: Grade VIII (1956-57) plus in-migration. This should not be construed as the percentage of the college-age group (18-21) attending university. See Appendix E.

early years of school are large. The propensity of students for higher education is low. (Table 13). The city itself is not large enough at this time to support a college. Even when residential dormitories are provided it certainly would not command the same priority rating as the Okanagan or West Kootenays.

KAMLOOPS, SOUTH CARIBOO. Although this region has a smaller population than the other regions, I appreciate that it has a very important core city, Kamloops. The population is rapidly increasing. There are more school-aged children in Kamloops than in any other city in the southwestern interior. Furthermore, the propensity of Kamloops students to seek higher education is amongst the highest in the province. The growth potential of the Kamloops region would appear to be favourable, particularly when one notes the important trade and transportation focus of the city and the potential indus-

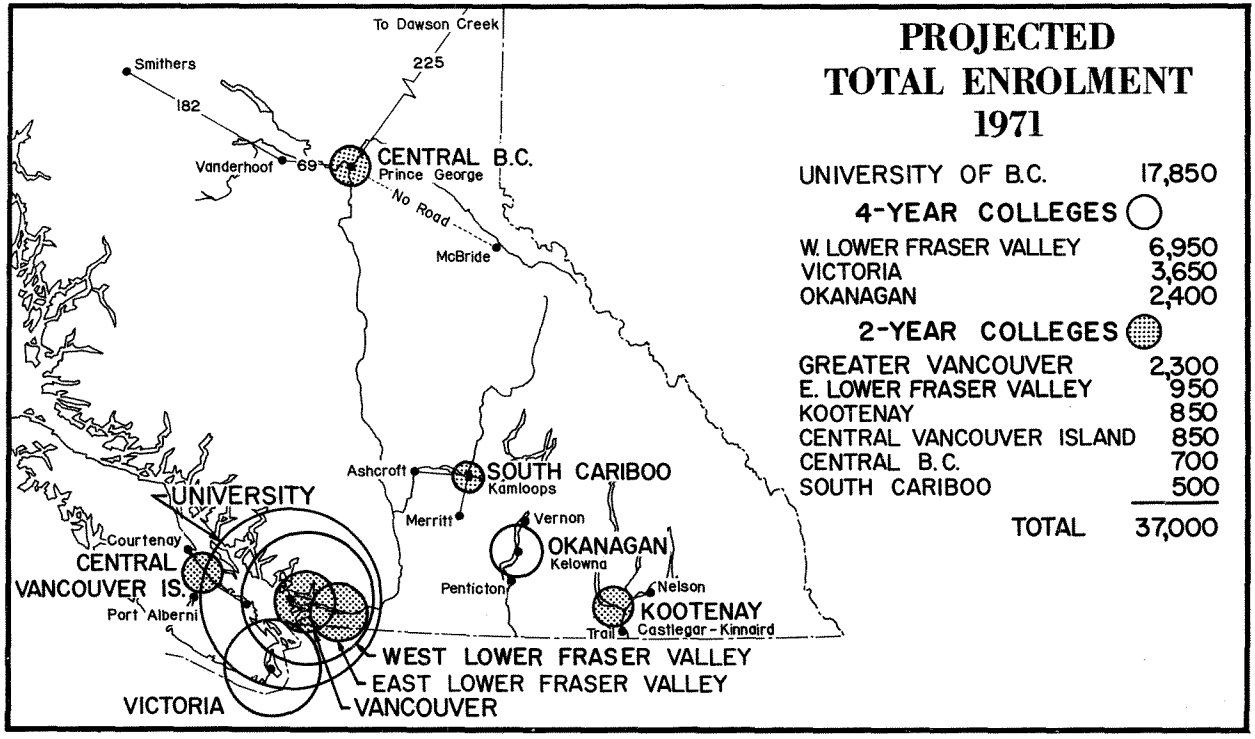
To Dawson Creek
225
Smithers
182
Vanderhoof
69
CENTRAL B.C.
Prince George
No Road
McBride
Ashcroft
SOUTH CARIBOO
Kamloops
Merritt
Vernon
OKANAGAN
Kelowna
Penticton
Nelson
KOOTENAY
Trail
Castlegar - Kinnaird
UNIVERSITY
Courtenay
CENTRAL
VANCOUVER IS.
Port Alberni
WEST LOWER FRASER VALLEY
EAST LOWER FRASER VALLEY
VANCOUVER
VICTORIA
PROJECTED
TOTAL ENROLMENT
1971
UNIVERSITY OF B.C. 17,850
4-YEAR COLLEGES
W. LOWER FRASER VALLEY 6,950
VICTORIA 3,650
OKANAGAN 2,400
2-YEAR COLLEGES
GREATER VANCOUVER 2,300
E. LOWER FRASER VALLEY 950
KOOTENAY 850
CENTRAL VANCOUVER ISLAND 850
CENTRAL B.C. 700
SOUTH CARIBOO 500
TOTAL 37,000

FIGURE 9

trial development within the region based upon mines and forests.

Kamloops must be considered as one of the sites of two-year regional colleges to be established by 1971.

OTHER REGIONS. The remaining major regions of the province have relatively small populations. No one area is important enough to warrant a college until the next decade. It appears that Grade XIII will have to continue to be provided in the larger centres such as Kitimat and Dawson Creek, and students seeking further training will have to move to one of the two or four-year institutions in other regions. It is likely that the Peace River will approach the college threshold shortly after 1970.

RECOMMENDATIONS. Priorities must be established. In so doing it is well to remember that York University was established in an old, remodelled private house and that on the Point Grey campus huts and other temporary quarters were used to facilitate rapid expansion. It would be possible in some centres to use parts of the high school buildings in the same way that Carleton University in Ottawa did in its early development. If this alternative is adopted, there must be complete separation of high school and college functions. The utilization of such premises would permit an early start for college classes while plans were readied and new buildings were under construction.

Based upon the above considerations and (a) appreciating the necessity for providing for the largest numbers of students; (b) meeting the needs of areas which have not benefited from institutions of higher learning up to the present; (c) stressing the need to stabilize the University of British Columbia's enrolment; and (d) being realistic about financing higher education, I recommend immediate action on the following:

1. that Victoria College should have the privilege of deciding to become an independent degree-granting college;
2. that a four-year degree-granting college be established in the western Lower Fraser Valley;

3. that the school districts of the Okanagan Valley co-operate in establishing a two-year regional college with the expectation of its becoming a four-year degree-granting college by 1970;
4. that a two-year regional college be established in the vicinity of Castlegar to serve the school districts from Trail to Nelson;
5. that a two-year regional college be established in metropolitan Vancouver.

Further, I see the desirability of two-year regional colleges being planned for operation by 1971 in the following regions:

1. Central Vancouver Island Region;
2. Kamloops and South Cariboo Region;
3. Central Interior (Prince George);
4. Eastern Lower Fraser Valley.

Total projected enrolments for 1971 at the various centres I have recommended are shown in Figure 9.

Reference

[1] D. G. Morrison and S. V. Martorana, *Criteria for the Establishment of Two-Year Colleges*, U. S. Department of Health, Education and Welfare, Washington, D. C., 1960, p. 61.

Assistance for Higher Education: Academic Board and Grants Commission

IN ORDER TO ESTABLISH confidence in the system of higher education I have recommended, and to keep faith with the people of the Province, particularly with the young people and their parents, it will be necessary to ensure the academic standards of the various regional colleges that will be established. With the best intentions young people may choose a local college which they assume has an academic standing equivalent to that of a university. This being so, the standards in academic programmes of regional colleges must be such that able students can transfer to the University of British Columbia, Victoria College, or any other degree-granting institution. In brief, in any programme of decentralization the public must be assured that new institutions will not only maintain existing standards but indeed will help to raise the entire level of academic education throughout the Province.

I propose the establishment of an Academic Board that will guarantee the standards of new institutions. The services of such a Board would be of great value, for example, in fostering the growth and academic development of the new institutions I am recommending, and at the same time it would assist

in gaining public support for those essential facilities and resources to be made available in attaining the goals the college has set for itself. It is not suggested that this Board would dictate to the institution; rather, it would offer wise and sympathetic advice to guide the institution in the course of its development. For example, the Board might negotiate with larger institutions to procure proper facilities, staff and so forth for a fledgling institution. In addition it could, from time to time, arrange for the temporary exchange of academic personnel between established institutions and new colleges; in this way the whole system of higher education would work more effectively in order to promote excellence. Moreover, a regional college would have the advice and assistance of the Board in seeking well-qualified staff. Through such a Board, the transfer of students from one institution to another could be facilitated. It would pay regular visits to the regional colleges in order to aid them in planning and expanding their academic programmes, and thus a constant review of the academic standards would be maintained in regional colleges.

The Academic Board would have no direct responsibility for the distribution of funds to the regional colleges. However, academic considerations must take precedence over all others in the whole system of higher education. It is essential that close liaison be maintained between the Academic Board and the Grants Commission I shall propose, in order that scholarly interests may be served in an imaginative way. The Grants Commission would be the facilitating agency to support and promote the academic aims of the institutions, and hence the advice of the Academic Board regarding the programme, staff, and standards of the colleges would be a matter of first importance.

If there is any indication that the academic standards of a regional college are not being maintained in relation to the goals which it has set for itself, the Academic Board would investigate and give assistance for correcting the situation. If conditions were not acceptably improved, the Board would withdraw its recognition of the college, and in consequence the Grants Commission might in turn consider withdrawal of

financial support from public funds. The Academic Board would become, therefore, an accrediting agency; and it would be understood that any institution eligible for public financial support would have to be approved academically by it. This body would review and pass judgment upon the quality of courses offered, the qualifications of the teaching staff, competence in new areas and new disciplines that might be offered as the institution grew, and keep under constant review the achievements of students who come from these colleges to other institutions. Such an Academic Board might be composed of nine persons initially; three from the University of British Columbia, three from Victoria College and three appointees of the Lieutenant-Governor-in-Council. All should be selected on a basis of academic knowledgeability and they should represent a wide variety of fields and disciplines.

In order that the regional colleges may pursue the goals they have set for themselves without restraint, the Academic Board would not participate directly in the internal management or affairs of the colleges. As I have said elsewhere local interests must be served, and citizens resident in the region are expected to exercise initiative and encourage support for academic undertakings promoting the objectives of higher education both within their own region and throughout the Province. Although the governing bodies I shall propose for new institutions will include representatives from school boards which have given wise and effective leadership in the area of elementary and secondary education, few of them can be fairly expected at this time to have extensive knowledge about higher education. For that reason, they will seek the advice and guidance of the Academic Board I have recommended.

I turn now to the problem of financing new institutions. The financing of the two-year institutions should come from three sources: local, provincial, and federal. On the other hand, higher education at the college and university level cannot be a regional matter, since such institutions are created to serve the entire Province.

In order to provide for a balanced and harmonious develop-

ment within the provincial system of higher education and to achieve a consolidated plan for advancing the educational ideals I have envisaged, it is most important that responsible and effective representations be made to the Provincial Government concerning the financial support which should be given each institution. Requests by individual institutions must be considered in terms of the overall programme for higher education of the Province. Any means established should ensure the equitable distribution of funds among institutions and, at the same time, provide encouragement and support for colleges during the early stages of their development. The methods for making representation to government should guarantee the best possible use of public funds by avoiding a duplication of expensive course offerings, laboratories, professional schools, libraries, and equipment for specialized teaching and research.

In addition, just as it is important that the needs of the universities be presented to Government through some systematic procedure, it is also important that by this same procedure the needs of the Province and the country be interpreted to the institutions of higher learning. Educational bodies supported by public funds have a deep responsibility to the communities which they serve and lead. The United Kingdom University Grants Commission has served both national and institutional needs and aspirations because it has fulfilled the mission for which it was established: namely, "to assist, in consultation with the universities and other bodies concerned, the preparation and execution of such plans for the development of the universities as may from time to time be required in order to ensure that they are fully adequate to national needs."

An examination of practices used elsewhere reveals that there are three principal means whereby submissions could be made to the Provincial Government for the financial support of institutions of higher education.

1. Each institution would be permitted to make separate submissions to the Government for the capital and operating funds it requires to accomplish its goals.

2. A Council might be established consisting of the chief executive officers of the four-year and university institutions throughout the Province. Such a system is used extensively in the United States, where the purpose is to achieve some measure of agreement between competing institutions before any representations, separate or collective, are made to the government.
3. A separate and distinct Grants Commission could be established to survey the institutional needs throughout the Province and to advise the Council of Public Instruction on the allocation of capital and operating funds for universities and colleges.

In varying degrees each of these three means provides a solution to a vexing and complex problem; each also has its limitations. Separate representation by individual institutions to a government may create an impression that allocation of available funds might be made on some basis other than an objective appraisal of academic needs and objectives. Skill of presentation or persuasive ability by regional boards might conceivably work to the disadvantage of those regions which cannot draw upon the services of experienced negotiators. It is almost impossible for any institution to be objective about its own needs relative to those of others, and excessive competition for funds might impair the unity of the whole structure of the educational system. It is wasteful of the time of government and inefficient administrative practice to establish a system whereby cabinet ministers are required to analyse, appraise, and adjudicate submissions from institutions that vary in size, complexity, and stage of development. Such a situation of separate representation contributes to an unnecessary atmosphere of uncertainty and instability with respect to the annual budget of each institution; and it hinders drastically the effectiveness and conviction with which each may plan for the future. The institutions comprising the system must be assured of sympathetic and equitable support.

These inherent limitations pertain equally to the second method—that of a Council comprised of the chief executive officers of each institution. It removes none of the difficulties

associated with separate representations. On the contrary, it adds a further complication: it places a chief executive officer in the difficult position of having to weigh the legitimate claims of his own institution against the equally deserving submissions of sister institutions.

In California, in Michigan, in Australia, in New Zealand, and, since 1919, in Great Britain, such difficulties have been largely overcome by the establishment of an impartial co-ordinating Board, sometimes termed a Grants Commission or a Commission on Higher Education. After investigation each has chosen as the best solution a separate and autonomous Commission on Higher Education. On the basis of my own studies and experience, I am in favour of the establishment of such a commission in British Columbia.

The establishment of a commission would eliminate many of the objections associated with the first two alternatives. However, in fairness I should make reference to the principal objections that have been raised against such a method.

It has been said that a Commission on Higher Education might deny direct access to the government by governing bodies of the institutions by interposing an unnecessary body between them and the Government. Moreover, it might not have the same intimate knowledge or grasp of a regional situation as would the governing body of a particular institution in that area. As a consequence, decisions taken by the Commission concerning the allocation of funds might create an impression of remote authoritarianism, and the fear that local needs and aspirations might not receive full and sympathetic consideration. It has even been suggested that, because at present there are only two institutions making submissions to the Provincial Government, such a commission is unnecessary. However, if my recommendations are acted upon and new institutions are created, this argument becomes invalid.

I am not suggesting any unnecessary interference with the autonomy of institutions, rather, I am suggesting the provision of a stable, permanent, knowledgeable and impartial agency which will assist all institutions in their development. In terms of higher education, knowledge of both provincial and local

conditions is necessary; they cannot be considered in isolation from one another. A system must be established and maintained that will permit consideration of both in depth and perspective. Thus, despite the existence in this Province at present of only one four-year college and one university, I foresee the need in a short time for the establishment of a University Grants Commission. It is important that an impartial and respected Board having the confidence of the Provincial Government be in the position to carry out negotiations at the highest level on behalf of new and small institutions which might experience considerable difficulty in urging their case, simply by virtue of the fact that they are small and young, and so in competition with major and more senior institutions.

Furthermore, this Commission, if it is to discharge to the full its responsibility for colleges and universities, must recognize that its decisions will influence directly the general welfare of education throughout the Province.

It is only by careful appraisal of local needs in higher education and in consultation with regional institutions that such a Commission can carry out its principal task, which is to ensure a general standard of excellence in education. I envisage that such a Commission would confer regularly with the local governing bodies of regional institutions, and, in particular, there should be the closest possible liaison with the Academic Board in order to foster an atmosphere of understanding and goodwill. Any unplanned or sporadic development without reference to the advice of the Academic Board and of the Grants Commission would lead inevitably to a confusion of educational aims and a dissipation of provincial funds. In other words, the Commission would be responsible not only for planning to meet current issues, but would have as part of its responsibilities the assessment of long-range developments in the years ahead.

The kind of Commission I envisage would be vested with the specific responsibility of appraising the requirements of the institutions and of satisfying governments of the soundness of the proposals. Such a Commission, I am convinced, would

be extremely useful as a senior advisory body to the Provincial Government, not only for immediate projects but also for long-range planning and the continuous development of education within the Province. There is, in short, the need for a body to view the problem of higher education as a whole, to make overall financial recommendations, and to arrive at estimates which have a sensible relation to government budgets. The presence of an informed committee, commanding public respect, would increase the confidence of the Government itself and of the people that every safeguard had been taken prior to decision. The experience of the United Kingdom Grants Commission has shown that if such a safeguard is to be provided, the Commission should enjoy complete independence and should not be dominated by any single institution or by government.

The functions of the Grants Commission would be:

1. To analyse and appraise the needs, aims, and future plans of individual institutions in relation to the whole development of higher education in this Province.
2. To seek and gather systematically pertinent information and advice from the institutions themselves and from all available sources.
3. To recommend to the Provincial Government policy, both long and short term, with respect to the continuing operation and financing of higher education.
4. To receive and study the budget estimates for both capital and operating needs of each institution.
5. To make a combined submission on behalf of all institutions to the Provincial Government for support for the operating and capital revenue of each.
6. To exercise an executive function by distributing the funds which the Provincial Legislature assigns for higher education.
7. To distribute the grants made by the Federal Government towards the operating revenue of institutions of higher learning.
8. To submit an annual report to the Legislature.

If the Commission is to discharge these functions properly,

it is essential that it command the respect of the Government, the institutions, and the public. The Commission would act primarily in a staff relationship with the Government—the staff possessing the responsibility of a recommendation, the Government the responsibility of taking action with respect to these recommendations. Of course, the Government cannot be committed to implement any or all the recommendations it receives. It should nevertheless be expected to pass official judgment upon them after formal consultation with the Commission prior to decision regarding annual provincial budgets for higher education.

In the light of these considerations, I recommend a Grants Commission having the following membership:

1. A Chairman appointed by the Lieutenant - Governor - in-Council. Because of the inseparable connection between academic and financial matters, this person should also act as chairman of the Academic Board.
2. One member nominated for a three-year term by each of the institutions whose work the Commission embraces. The number of members will have to be increased as new institutions are established. It would be desirable if the Faculty of each institution had a voice in the appointment of the representative.
3. An equal number appointed for a three-year term by the Lieutenant-Governor-in-Council. The choice of these members should be left to the Government, but it is suggested that they include representatives of business, labour, and the professions.
4. A full-time, paid Executive Director, a Financial Officer, and secretarial staff who will act jointly for the Academic Board: these persons should be employees of the Commission.

Provision should also be made for calling in advisors on campus planning, building and other aspects of the physical design and development of colleges. Since much of the initial work will be done by the institutions themselves, it would be unnecessary to create a large staff.

I have not attempted to specify in any detailed manner how

either the Academic Board or the Grants Commission will carry out their work. Experience indicates that such boards and commissions elsewhere have defined their own terms and procedures as they carry out their responsibilities. This is especially the case during the formative years of a new and diversified development.

Governing Bodies for New Institutions

SINCE THE NEW two-year institutions I have suggested will draw much support and encouragement from the local areas they serve, it is important that citizens of those areas have a voice in the government of these institutions. Within the Province, those agencies which have the widest knowledge and experience in financing and developing educational facilities are the Boards of School Trustees. They are now responsible for ensuring that a level of excellence in primary and secondary schooling is provided, and I have been impressed by the wisdom and the sophistication of these Boards during my travels throughout the Province. In my opinion, they are well suited to appraise the educational needs and goals of areas within the Province, and for that reason they should have a large measure of responsibility for higher education in two-year regional colleges.

If new institutions are established on a regional basis by agreement between the Provincial Government and a group of Boards of School Trustees, I recommend that a governing body be established for each institution, composed as follows:

1. One representative named by each of the co-operating Boards of School Trustees;

2. One representative named by the Lieutenant-Governor-in-Council;
3. One representative named from their number by the superintendents of schools in the co-operating school districts;
4. One representative named by the Academic Board;
5. One representative named by the Grants Commission;
6. The President or Principal of the institution, who shall not be a voting member;
7. One representative named by the Faculty of the institution, who shall not be a member of that Faculty.

This governing body would have authority over the financial and academic affairs of the institution. Financial affairs include property; investments; rights of expropriation; buildings; all appointments, promotions and dismissals; salaries; fund-raising; fee-structure; borrowing powers. Academic affairs include curriculum, granting of diplomas; establishment of scholarships, prizes, bursaries and loans; time-table; examinations; calendar; library; entrance requirements.

Lesiglation as recommended by the Academic Board and the Grants Commission will be required by the Provincial Government to establish these new institutions to provide for governing bodies, and to establish by statute the Boards of School Trustees which will co-operate in the continuing financial support of a regional college.

In respect to the procedure in establishing a four-year college in the Western Lower Fraser Valley, I recommend that:

1. The Provincial Government, after consultation with the Academic Board, proceed with the immediate appointment of a Board of Governors.
2. When this Board of Governors is established, it should appoint a President, and, in consultation with him, draft for the consideration of the Provincial Government, appropriate Legislation for the establishment and operation of a four-year college. This Legislation should provide for the establishment of a Senate.
3. With reference to the membership on the Board, and without prejudice to the recommendations of the Academic Board, I suggest that provision be made for:

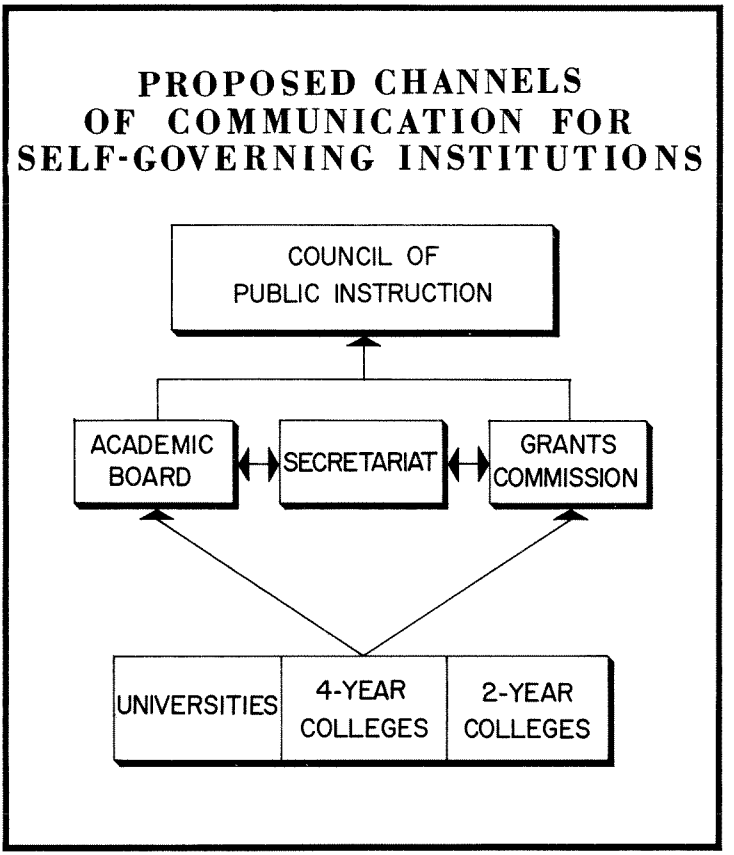

FIGURE 10

(a) appointments by the Lieutenant-Governor-in-Council.

(b) appointments to the Board from the Senate, when established.

(c) the election by the Faculty of the institution of at least one Board member. This will provide for academic representation on the Board. By this means the Faculty can have a voice in the election of those they consider to have the experience, the scholastic repute, and the specialized knowledge to assess the teaching and re-

search being carried on. Such representation would probably be of assistance to the Board in obtaining a full appreciation of university affairs, the differences between the various disciplines, the complexities of academic status, and staff structure.

I do not think any nominee for such election should be a salaried employee of the institution itself. It would be invidious to place a Faculty member in the position of having to vote on his own appointment and it would be difficult for him to be dispassionate about his own area of academic interest. Distinguished graduates and distinguished Faculty members from a sister institution are the sort of persons who might be asked to stand for nomination in this category.

(d) The Chancellor of the institution to be a member of the Board of Governors.

(e) The Board to elect its own Chairman.

(f) The President to attend all Board meetings in his role and function as chief executive officer. Because he is chief executive officer, I think it inappropriate that the President should be a voting member of the Board.

(g) all members of the Board, whether elected or appointed, to serve for a three-year term and no member should be eligible to serve consecutively for more than two three-year terms.

(h) the first members to be appointed for one, two and three years respectively so that thereafter an equal number shall retire each year.

The relations between the various advisory boards and the institutions are shown in Figure 10.

Financing of New Colleges

IN ESTIMATING COSTS for the development of higher education recommended in this report, it is convenient to consider the anticipated development in three phases:

Phase 1: The present to 1965.

Phase 2: 1965-1971.

Phase 3: 1971 onward.

Quite apart from gathering a faculty for a new institution, it will take at least two years to plan buildings and complete them. Even with the immediate acceptance of the recommendations in this report, it will not be possible to have other institutions of higher education in newly constructed premises until the academic year 1965-66, or the year following, although the use of temporary accommodation may permit an earlier beginning.

During Phase 1, the expected increase in school-age population will continue to overtax the resources of existing institutions. The building programme at the new Gordon Head Campus of Victoria College is well under way and will permit accommodation of the approximately 3,000 students predicted for this institution by the end of Phase 1. The situation at the

University of British Columbia will be different. A study of capital needs is currently being undertaken, but it is tentatively premised on the developments which will take place in the Province at large and on the urgent need to expand and strengthen the graduate programme. No estimate of capital requirements can be provided at this time.

During Phase 1, operating costs will inevitably be increased. As I have pointed out, The University of British Columbia has operated at a lower annual cost per student than the rest of Canada. This cannot continue, and to correct it will require by the end of Phase 1 that operating costs per student at the University be increased to $2,100, in accordance with the projected Canadian average cost per student for 1965-66.

Special mention should be made of the situation in the City of Vancouver, where the King Edward School was converted in 1962 to a centre for continuing education. During the current session, 1962-63, some 750 full-time students are completing all or part of their senior matriculation in a college environment, quite different from that of a high school. It would be desirable for the Vancouver School Trustees to extend this operation to include, by 1963-64, second year courses in Arts and Science. With the Vancouver School of Art and the Vancouver Vocational Institute, the city will have a well-rounded regional college offering.

By the summer of 1965, initial construction should be completed for the four-year college in the Western Lower Fraser Valley and the two-year colleges in the Okanagan and the West Kootenays.

During Phase 2, 1965-71, the college in the Lower Fraser Valley will continue to grow rapidly and further construction will be necessary during this period. Early in Phase 3, it is probable that this college will have become an institution of some 7,000 students. About the same time, the college in the Okanagan will be reaching a point where it might soon become a four-year degree-granting institution. Phase 2, therefore, will be a period of growth and consolidation for the first new institutions, and one of planning for the regional colleges which should start operation in Phase 3.

The Grants Commission and Academic Board should assist in implementing these recommendations. These bodies should determine the priorities for the establishment of colleges in regions such as Prince George, Kamloops, Nanaimo-Parksville-Qualicum-Alberni and Abbotsford-Chilliwack-Mission-Hope. All of these areas can anticipate regional colleges early in Phase 3, when in each a minimum of 400 to 500 students in the academic programme can be assured.

CAPITAL COSTS: Details of how the costs set forth below were estimated are given in Appendices A to D. In giving cost estimates for the construction and the furnishing of buildings, I have used throughout the figure of $20 per sq. ft., which is the average cost of recent permanent construction and furnishings at the University, and I have used areas per student based on standards developed here. (See Appendix A) In the Okanagan and the West Kootenays, it is possible that the local communities would make available both the site and basic services. Consequently, in listing the capital expenditures, I have not included these costs. The capital costs, year by year for a four-year college in the Western Lower Fraser Valley, and two two-year colleges (Okanagan and West Kootenays) are estimated in Tables 14 and 15.

For a college in the West Kootenays, which is typical of most other regional colleges to be established later in Phase 3, we assume an initial registration of 500, growing in five years to 900. It should be noted that the smaller the registration in a two-year college the higher the per student cost for both capital and operation, since, for example, the size of library, the cost of books, size of administration building and bookstore and other overhead costs are approximately the same for both smaller and larger institutions. In addition, to provide an adequate offering of courses, the student-faculty ratio will be lower in a small institution than in a larger one.

I set out below approximate capital cost figures for buildings and furnishings required to the end of Phase 2. It should be stressed that I am not making a blueprint for these institutions; rather, I am giving approximate estimates of what buildings and furnishings might cost. (Table 16) The figures

TABLE 14. ESTIMATED OPERATING COSTS
WESTERN LOWER FRASER VALLEY

	ESTIMATED No. OF STUDENTS	APPROXIMATE COST PER STUDENT	APPROXIMATE TOTAL OPERATING COST
1965	2,400	$1,650	$4,000,000
1971	7,000	$2,350	$16,000,000

TABLE 15. ESTIMATED OPERATING COSTS
OKANAGAN AND WEST KOOTENAY COLLEGES

		No. OF STUDENTS	COST PER STUDENT	TOTAL OPERATING COST
Okanagan	1965	750	$ 900	$ 675,000
	1971	2,400	$1,300	$3,000,000
West Kootenays	1965	500	$900	$450,000
	1971	900	$1,300	$1,170,000

TABLE 16. SUMMARY OF CAPITAL COSTS
OF PROPOSED NEW INSTITUTIONS
FOR PHASE 2, 1965-71

	INITIAL COSTS		
	1963-64	1964-65	1965-71
Western Lower Fraser Valley	$2,000,000	$2,000,000	$5,000,000
Okanagan	$1,000,000	$1,000,000	$1,500,000
West Kootenay	$450,000	$450,000	$800,000
	$3,450,000	$3,450,000	$7,300,000*

* For the five years 1965-71, about $1,460,000 per year.

TABLE 17. APPROXIMATE COST OF INSTRUCTION PER FULL-TIME EQUIVALENT STUDENT BY FACULTY, UBC, 1961-62

FACULTY	APPROX. TOTAL COST OF INSTRUCTION PER F.T.E. STUDENT TAUGHT BY STAFF OF THE FACULTY*
Agriculture	$3,610
Applied Science (including Schools)	2,030
Arts and Science (including Schools)	765
Commerce and Business Administration	1,130
Education	1,110
Forestry	1,320
Law	1,070
Medicine (including Rehabilitation)	5,170
Pharmacy	1,180
OVERALL COST F.T.E.	$ 970

* Includes cost of academic services.

Note: Graduate students are allocated to individual faculties.

include only minimal allowances for student services such as lunch rooms, lounges, and gymnasia, and no residences are included, since if needed, the latter can be built on a self-liquidating basis. Nevertheless, these estimates, included only as an example, cannot be considered final because they may be modified by various factors such as programme characteristics, inflationary trends, regional differences, and local initiative in respect to rate of development.

The estimated capital costs for the Western Lower Fraser Valley total $9,000,000 up to 1971. Total capital costs for the Okanagan in the same period are estimated at $3,500,000 and those for the West Kootenays at $1,700,000. I must emphasize that these capital costs are not new costs to be im-

posed on the Province by decentralization. They are capital requirements which must be met to accommodate the students who will be demanding advanced education over the next eight years. If the capital requirements are not met by decentralization, they will have to be met through equivalent expansion of undergraduate and ancillary facilities at Point Grey. Based on experience elsewhere, the costs at the University would be higher. Such has been the case in California. One reason is that residences would be required for many more students at the University than at regional colleges.

OPERATING COSTS. It would be inaccurate to use the predicted Canadian average costs per student per year in arriving at probable operating costs for new colleges. The reason, of course, is that the average is derived from figures which include all of the expensive graduate and professional schools in all our universities. Arts and Science programmes cost less than the national overall average. No Canadian estimates by type of education have yet been published, and I approach this problem, therefore, without prior experience. In Table 17 I show the approximate cost per full-time equivalent student in each faculty at UBC for 1961-62. While UBC's overall average is lower than that for Canada*, the proportional expenditure per student in each faculty provides an estimate of the relation which exists between costs by type of education. If these proportions are applied to the predicted Canadian average cost for 1965, it can be seen that for an Arts and Science programme for the Western Lower Fraser Valley the cost will be $1,650 per student per year. This figure may rise by 1971 to $2,350 per student per year, while the overall provincial average is expected to be $3,000 per student per year.

---

* Actually, UBC average costs per student are about $400 lower than the Canadian average (in 1961, Canada—$1,550; UBC—$1,128). Teaching sections in the first two years of Arts and Science are large, an average of 62 per class, and in some cases as large as 200 per class. The programme, therefore, tends to be impersonal, and this fact contributes to a disturbingly high failure rate. Outright failures in 1961-62 amounted to 26 per cent of the first year enrolment. Only 36.4 per cent of the students in first year Arts and Science passed in all their courses.

The total operating costs per year in 1965 will approximate four million dollars, and in 1971, 16 million dollars. Incredible as this may seem, it must be remembered that our best estimates for total cost of higher education in British Columbia in 1971 are of the order of 100 million dollars per year (see page 16). Canada, as a whole, will be spending one billion dollars a year.

Many studies have been made of the operating costs of two-year colleges. While costs differ from community to community, the "instructional" expenses are always approximately equal to the "non-instructional" expenses. *(c.f. A Master Plan for Higher Education in California 1960-75,* pp. 156-160). In estimating annual operating costs, I assume, therefore, that the total cost, when the institution has passed its organizational stage, will be approximately double the cost of faculty salaries.

By 1971, the Okanagan will have 2,400 students and 120 teaching staff, and Castlegar will have 900 students and 45 staff. The problem of estimating average salaries eight years from now is difficult, and all we know is that academic salaries will increase substantially. If we assume that the average staff salary will be $9,000 per annum in 1965, the present UBC average, the staff salary cost for each institution will be $450 per student. Doubling this, we get an estimated operating cost per student of about $900 in 1965. This can be expected to increase by 1971 (proportionately to the Canadian overall average) to $1,300 per student per year. Thus, the total operating costs for these new colleges may be approximately as shown in Table 18.

At present, the local municipalities adjacent to the University of British Columbia or Victoria College do not contribute directly to either capital or operating costs of these institutions. When new institutions are established, a decision will have to be taken as to whether they shall be wholly financed, as at present, by governments (Federal and Provincial) and student fees, or whether some part of the cost will be provided by the regions in which the new colleges are built. I have given much thought to this question, and, while I realize

TABLE 18. ALLOCATION OF STUDENTS TO EXISTING AND PROPOSED INSTITUTIONS, 1965-66 and 1971-72, AND ESTIMATED OPERATING COSTS OF THESE INSTITUTIONS ACCORDING TO PROJECTED CANADIAN AVERAGES

	1965-66 APPROX. ENROLMENT	1965-66 APPROX. OPERATING COST	1971-72 APPROX. ENROLMENT	1971-72 APPROX. OPERATING COST
University of British Columbia	13,400	$28,000,000	17,600	$53,000,000
Victoria College	3,000	5,000,000	3,700	8,700,000
Western Lower Fraser Valley	2,400	4,000,000	7,000	16,500,000
Okanagan	750	675,000	2,400	3,000,000
Kootenay	500	450,000	900	1,000,000
King Edward, Vancouver	1,500	1,350,000	2,300	3,000,000
	21,550		33,900	
Grade XIII	750			
Additional Regional Colleges and Grade XIII			3,100	
TOTAL	22,300	$39,475,000	37,000	$85,200,000

that the final decision must be left to others, I make the following recommendation:

The two-year regional college, if it is to fulfill its function, to a great extent must embody the characteristics and aspirations of the community and the region it serves. These colleges will, therefore, require regional and community financial support. This has been the pattern in most successful two-year colleges in the USA. However, once a college becomes a degree-granting institution and so serves the needs of the Province at large, it should be supported as are other provincial institutions, not only in British Columbia, but also in the other provinces.

I recommend that the costs of establishing and operating two-year colleges be apportioned as follows:

Capital: One third of the total capital cost (including land, buildings, equipment, and libraries) should be borne by the community or region which the college serves, and two thirds should come from funds supplied by or through the Provincial Government. If a portion of the capital cost is paid by the Federal Government under the Vocational and Technical Training Act, the Provincial Government's share would be reduced.

Operating: About 25 per cent should come from student fees, at least 25 per cent from the community or region, and not more than 50 per cent from government grants (Provincial and Federal). This is analogous to the pattern recommended in a study undertaken for the Department of Health, Education and Welfare in the United States—one third state, one third local, and one third fees.

Colleges, such as the one proposed in the Lower Fraser Valley area, which from the beginning are planned as four-year institutions, should be financed on the same basis as the University and Victoria College, both for operating and capital costs.

When and if two-year regional colleges develop to the point where they change their function and become four-year degree-granting colleges, the regional share of operating costs

would be taken over by increases in grants from the Provincial Government and students' fees, so that their financing would be on a par with other four-year institutions. However, a region, because of local pride in its college, may wish to continue all or part of its support, on the understanding that this would not reduce the Provincial contribution. In this way regions could develop colleges with unusually high standards or special areas of interest. I would hope that most regions would continue their support for these reasons.

Since the regional colleges in the Okanagan and the West Kootenays are the only ones on which a start must be made as soon as possible, I indicate below the implications of my financial recommendations for these regions. In this connection I found most helpful the briefs submitted by communities in these regions.

OKANAGAN COLLEGE. With an initial registration of 750 and initial capital costs in the first five years of $3,500,000, we have:

Total building costs	$3,500,000
Regional share	$1,170,000
Provincial share	$2,330,000

The regional share could be financed by a 20-year bond issue guaranteed by the Provincial Government, which would involve a sinking fund payment of $58,500 and interest charges of about the same amount, a total of $117,000 a year in all.

Operating costs, as indicated earlier, would amount initially to about $900 per student or $750,000 annually. This would be distributed as follows:

Fees	25% or $169,000 ($225 per student)
Regional Cost	25% or $169,000 ($225 per student)
Federal Government	$133,000 ($177 per student)
Provincial Government	$204,000 ($272 per student)

The *total* regional cost, therefore (operating and capital), would approximate $286,000 annually initially—$169,000 operating and $117,000 debt charge. The Provincial Government's *total* cost initially (operating and capital), including a debt charge of $233,000, would total $437,000, or $583 per

student. The per student cost will decrease significantly as the number of students increases.

WEST KOOTENAY COLLEGE. With an initial registration of 500 and initial capital costs in the first five years of $1,700,000, we have:

Total building costs	$1,700,000
Regional share	$567,000
Provincial share	$1,133,000

The regional share could be financed by a 20-year bond issue guaranteed by the Provincial Government, which would involve a sinking fund payment of about $29,000 and interest charges of about the same amount, a total of $57,000 per year in all.

Operating costs, as indicated earlier, are estimated at about $900 per student initially, or $450,000 per annum. This would be distributed as follows:

Fees	25% or $112,500 ($225 per student)
Regional Cost	25% or $112,500 ($225 per student)
Federal Government	$88,500 ($177 per student)
Provincial Government	$136,500 ($273 per student)

The *total* regional cost, therefore (operating and capital), would approximate $169,500: $57,000 debt charge and $112,500 operating. The Provincial Government's *total* cost (operating and capital), including a debt charge of $113,000, would total $249,000 or about $500 per student initially. This will decrease somewhat as the number of students increases.

It should be remembered that not all of the local community's contributions—or the Province's—will represent *additional* expenditures. Some of the new costs will be balanced by savings resulting from the closing down of senior matriculation in regions with colleges.

How should regions finance their share of the costs? Many alternatives are possible, but the one which seems to have the greatest merit was proposed in a brief submitted by the Southern Interior Junior College Society. The proposal was based on the fact that the school district where the college is located benefits the most. Adjacent school districts within commuting distance (one hour's travel time) benefit to a decreas-

TABLE 19. ESTIMATED AMOUNTS AND TIMING OF CAPITAL EXPENDITURES

PERIOD	BUILDING COSTS	REMARKS	APPROX. No. OF STUDENTS
Western Lower Fraser Valley (see Appendix D)			
1963-64	$2,000,000	Initial construction	
1964-65	2,000,000	Initial construction	
1965-66	1,000,000	Operation begins Sept., 1965	2,400
1966-71	4,000,000	Estimated enrolment by end of Phase 2	7,000
Okanagan College (see Appendix B)			
1963-64	$1,000,000	Initial construction	
1964-65	1,000,000	Initial construction	
1965-66	—	Classes begin	700
1966-71	1,500,000	Estimated enrolment by end of Phase 2	2,400
West Kootenay College (see Appendix C)			
1963-64	$ 450,000	Initial construction	
1964-65	450,000	Initial construction	
1965-66	—	Classes begin	500
1967-71	800,000	Total enrolment by end of Phase 2	900

ing degree the further they are from the college. Thus, the mill rate should be decreased as the distance of the college from the school district increases. This method of financing is being used successfully by the two-year college at Lethbridge, Alberta, and I recommend its adoption for regional colleges in British Columbia.

The total financial implications of the plan I propose for the whole Province, except for the capital requirements of the University and Victoria College (these are not currently available), for the years 1965 and 1971 can be seen from Tables 18 and 19. Capital costs, according to this plan, will be limited by restricting the necessity for construction of residences for

an estimated 5,000 students who, by reason of decentralization, will be within commuting distance of their college. Parents will benefit financially by not having to meet the expenses involved in sending these 5,000 students away to college—currently estimated at more than $1,200 a year.

Aside from the many important, indeed crucial academic reasons for decentralization, the proposed programme offers the most economic development of our higher educational system.

Conclusion

I NOW RETURN to the beginning of this report in order to repeat the central theme, the basis for the recommendations which I have made. British Columbia is facing in the immediate future an enormous increase in demand and need for education beyond high school. The numbers of young people qualified for and seeking higher education by 1971 will more than double. The task of providing for them requires a "new look" in higher education in this Province, planned for immediately, and followed by prompt action. The requirements include new institutions, new methods of financing, new methods of organization, and a new dimension in our approach to providing the highly qualified specialists needed to staff all our institutions of higher learning.

The recommendations are based on recognition of the need for diversification of opportunity, both in respect to the kinds of educational experiences available and the places where they can be obtained. The recommendations are based also on the all-important requirement of self-determination by individual institutions in respect to the operation and design of their programmes. Academic strength comes from pride, de-

termination, thoughtful assessment of goals and the ways of achieving them, freedom to explore new approaches, and application of imagination directed towards the goal of excellence. All these attributes depend on autonomy in the essential decisions which together determine the character of an institution.

Let us keep those goals in mind as we now proceed to remould higher education to meet the demands of our times, and let us face the tasks with the kind of positive confidence which was characteristic of those who founded the University of British Columbia in the midst of an academic wilderness. If we today can have the same courage, our children will look back with respect and admiration for our generation which successfully met its challenge.

Acknowledgements

IN ADDITION TO the conversations I held with many groups in the Province, I received a number of very helpful briefs. They provided me with detailed information about the various districts, their educational programmes, their willingness to support new colleges, and the kind of colleges they wanted.

Briefs were received from:

1. Abbotsford
   The Director of Adult Education
   The Board of School Trustees, School District 34
2. The British Columbia School Trustees' Association
3. Castlegar
   The Board of School Trustees, School District 9
   District Citizens' Group
4. Chilliwack, Board of School Trustees, School District 33
5. Cranbrook Chamber of Commerce
6. Creston Board of School Trustees, School District 5
7. East Kootenays Boards of School Trustees
8. The Faculty Association of the University of British Columbia
9. Fraser Valley University Association

10. Kamloops Region, Board of School Trustees, School District 24
11. City of Kelowna and Board of School Trustees, School District 23
12. The Kelowna Junior College Survey, and the Supplement to the Kelowna Junior College Survey
13. Kelowna Branch of the UBC Alumni Association
14. North Central B.C. Branch of the UBC Alumni Association
15. Nelson, The Board of School Trustees, School District 7
16. Prince George, The Board of School Trustees, School District 57
18. Prince George College
19. The Prince George Industrial Development Commission
20. Revelstoke, Citizens' and Board of School Trustees, School District 19
21. City of Rossland
22. Salmon Arm, The Junior College Committee
23. The Southern Interior Junior College Society
24. Trail and District Branch of the UBC Alumni Association
25. Trail, The Board of School Trustees, School District 11
26. Vernon, The Board of School Trustees, School District 22
27. Vernon District Council of Women.

Though I must take full responsibility for the content of this report, it would not have been possible to complete it without the many careful studies and analyses conducted by my colleagues.

I should like to express my warmest thanks and appreciation to the following members of the Faculty and Staff of the University of British Columbia for the assistance they gave me in the preparation of this report:

Miss Dora Hart
Miss Mary Laidlaw
Mr. R. J. Baker, Department of English
Dean S. N. F. Chant, Faculty of Arts and Science
Dr. J. D. Chapman, Department of Geography
Professor G. O. B. Davies, Department of History and International Studies

Dr. W. G. Hardwick, Department of Geography
Mr. R. R. Jeffels, Department of Romance Studies
Dr. S. A. Jennings, Department of Mathematics

I am grateful to the senior students in cartography in the Department of Geography who assisted in the preparation of the graphs and illustrations used in the report; and to Mr. James Banham, who supervised the publishing.

Appendices

APPENDIX A

1. *Floor-space standards for UBC Teaching Departments*

I will set out below an abbreviated version of the square footage standards used at The University of British Columbia for analysis of space requirements for teaching departments. The space per undergraduate is expressed as square feet per full-time equivalent student (F.T.E.). For example, if 1,000 students take one course in Chemistry each, this would be counted, on the basis of 5 courses per student, as 200 full-time equivalents in Chemistry.

	Sq. ft. undergraduate, non-lab. instructional space per F.T.E.	Sq. ft. informal and lab. instructional per F.T.E. students	Staff office research. preparation space per staff member	Shops storage and misc.
GROUP I				
Humanities, Social Sciences (except Geography) Mathematics	12	7.5	170	5%
GROUP II				
Geography and Education	12	15	280	10%
GROUP III				
Physics, Chemistry Biological Sciences, Geology	12	70	280	10%

I use these figures to calculate the basic number of sq. ft. for 1,000 students enrolled in an academic programme which is essentially "Liberal Arts" and Sciences. Such a programme is very similar to that taken by the majority of students at Victoria College at the present time. I assume one full-time member of the teaching staff for 20 students (student/faculty ratio 20:1).

2. *Basic Instructional Space for 1,000 students with 200 F.T.E. in Group II subjects and 200 F.T.E. in Group III subjects and 50 staff, 10 in Group II subjects, and 10 in Group III subjects*

	SQ. FT.	
600 Group I F.T.E. Students (19.5 sq. ft. each)	11,700	
30 Group I Staff (170 sq. ft. each)	5,100	
	16,800	
Plus 5%	840	17,640
200 Group II F.T.E. Students (27 sq. ft. each)	5,400	
10 Group II Staff (280 sq. ft. each)	2,800	
	8,200	
Plus 10%	820	9,020
200 Group III F.T.E. Students (82 sq. ft. each)	16,400	
10 Group III Staff (280 sq. ft. each)	2,800	
	19,200	
Plus 10%	1,920	21,120
Total space for 1,000 students and 50 staff		47,780

To the above must be added space for library, administration, bookstore, cafeteria, student lounge, gymnasium-auditorium, and power plant. In appendices B, C, and D, I combine these with instructional space to produce estimated total square footage for the Colleges in the Western Lower Fraser Valley, Okanagan, and West Kootenays.

APPENDIX B

Capital Costs for Okanagan College to 1971

1. *Total square footage estimates for Okanagan College to 1971*

The initial registration will be about 750, growing to 2,400 by 1971. As registration grows, additional buildings will be added over the period 1965-71.

	SQ. FT.
Total instructional space for 2,400 students	114,672
Administration—Bookstore	7,000
Cafeteria—Lounge	7,000
Auditorium—Gymnasium	20,000
Library—(initial development to house 10,000 books at 10 books per sq. ft., 600 readers at 25 sq. ft. each, and 2,000 sq. ft. for staff and working space)	18,000
Total square feet	166,672

It is estimated that a power plant to service this much space would cost $120,000 (building and equipment).

2. *Capital costs for Okanagan College to 1971*

In addition to normal building costs, there are a number of other capital costs involved. Furniture for classrooms, laboratories, offices, equipment, books, and architects' fees are the major items, but there will be many other minor items impossible to enumerate here. If an overall cost of $20 per sq. ft. is used, it is reasonable to assume that the total cost, other than books and equipment, will be covered, since good quality construction can probably be obtained at less than this figure. It is on this basis that the following rough estimate is given.

Buildings—166,000 sq. ft. @ $20.00 per sq. ft.	$3,320,000
Power House (estimated total cost)	120,000
Books—10,000 volumes at $6 plus $3 per volume for cataloguing and purchasing costs	90,000
Miscellaneous equipment	50,000
Total estimated cost	$3,580,000
Estimated capital cost per student (2,400 students)	$1,490

APPENDIX C

Capital Costs for West Kootenay College to 1971

1. *Total square footage estimates for West Kootenay College*

The initial registration will be 500, growing to 900 by 1971. Additional construction will probably not be needed until after 1971.

	SQ. FT.
Total instructional space for 900 students	43,002
Administration, bookstore, cafeteria-lounge	10,000
Auditorium-Gymnasium	15,000
Library (to house 10,000 books at 10 books per sq. ft., 200 readers at 25 sq. ft. each, and 1,500 sq. ft. staff and working area)	7,000
	75,002

2. *Capital costs for West Kootenay College*

The remarks I made earlier regarding the use of a figure of $20.00 per sq. ft. apply here. On this basis the following rough estimate is given.

Buildings 75,000 sq. ft. @ $20.00 per sq. ft.	$1,500,000
Power House (estimated total cost)	75,000
Books—10,000 volumes @ $6 plus $3 per volume, cataloguing and purchase costs	90,000
Miscellaneous equipment	35,000
Total estimated cost	$1,700,000

Estimated capital cost per student (900 students) $1,890

Once again, I stress that this figure is a rough estimate. Notice also that it costs more per student to accommodate 900 students than 1,500 students.

APPENDIX D

Capital Cost to 1971 of a Western Lower Fraser Valley College

The development at Burnaby is totally different from all other developments in the Province. It is likely to become, by 1971, a principal centre in the Province for undergraduate instruction in the Liberal Arts, Sciences and Education. Its rate of growth in the ten year period following its establishment will be extraordinary. I shall not attempt, because of the complexity of the problem, to indicate the types of buildings required on this campus. It would be idle, to pick just one example, to suggest how large a gymnasium will be needed without knowing whether or not compulsory Physical Education will be part of the institution's educational philosophy. Instead, I estimate minimum cost figures on the basis of UBC's experience, knowing that my estimates are minimal.

There will be about 7,000 students registered at Burnaby College in 1971-72. The square footage for basic instructional space for them will be 334,460 sq. ft. At $20.00 per sq. ft. this means for instructional space alone, an expenditure of about $6,680,000. Add to this a minimum undergraduate library of 50,000 volumes and space for 1,000 readers, minimal student lunch-room and lounge facilities, and the necessary administration space, and a total expenditure of about $9,000,000 to 1971 is obtained. The estimated cost per student (7,000 students) is $1,290.

This is for bare essentials. Nevertheless, the per-student capital cost will be lower than at colleges in the Okanagan and West Kootenays.

APPENDIX E

Methods Used for Projecting Enrolments

In this study projections of the "student pool" (i.e., the number of students from which those seeking post-high school education will be drawn) have been made for each region of British Columbia and summed to provide a provincial total. This approach permitted the recognition of:

(a) the regional basis for the decentralization of higher education;

(b) the regional variations of population growth and, of more significance, the growth of the student pool;

(c) the regional variation of the proportion of the student pool seeking higher education.

For many purposes a regional breakdown of the Province by census division and sub-division is appropriate. However, for the present purpose the school district has been used as the basic unit because it permits the recognition of a more refined regional structure and, statistically and administratively, it is of greater practical significance. In addition to determining the major regions of the Province, it was also necessary to locate those centres which are accessible to the largest number of students. The resulting regions and sub-regions are indicated in Table 20 along with the school districts of which they are composed. (Table 20 is attached to inside back cover).

In order to arrive at the student pools shown in Table 20, the enrolment in Grade 7 and Grade 2, 1959-60 was totalled for the school districts involved. These grades were selected because they represent the potential student pool for 1965 and 1971 respectively. However, use of these figures alone takes no account of the in-migration of children during the period 1959-71. To compensate for this, estimates were made of regional in-migration by taking the total increases of population of the region for the period 1956-61 and subtracting the number attributed to natural increase. The figure for the student pool was then adjusted to take account of the percentage annual increase attributable to in-migration (Table 20, Cols. 1, 4, and 7).

The 1965 and 1971 student pool for each of the regions once determined, it was then necessary to estimate what proportion the First Year-Grade XIII enrolment would be of that pool. To do this, the actual First Year-Grade XIII enrolment in 1961 (Table 20, Col. 2) was expressed as a percentage (Table 20, Col. 3, 5, and 8) of the appropriate student pool (i.e. Grade 8, 1956-7 plus in-migration). It is important to note that this figure, referred to as the "propensity" for

higher education, includes not only those students who went directly from school to post high school institutions but also those who delayed entry, those who were repeating all or part of their first-year programme, and those from outside British Columbia.

In order to determine this projection of the First Year—Grade XIII enrolment in 1965 and 1971 (Table 20, Cols. 6 and 9) it was necessary to take account of the increasing propensity as the result of the growing need for higher education, the influence of additional institutions accessible to a larger proportion of the student population, and the widening curriculum offered. Thus for each of 1965 and 1971 a "low" and "high" projection was made on the basis of different propensities. The actual 1961 propensity was used to produce the 1965 "low" figure, whereas the "high" figure for that year and both figures for 1971 were based upon propensities which take account of the factors mentioned above.

Projections for the First Year-Grade XIII enrolment by regions having been determined, it was necessary to allocate these students to existing and proposed institutions. Experience elsewhere in Canada and the USA has shown that most students prefer to attend a college within commuting distance of their homes, while the majority of students who must leave home—those beyond commuting distance to the nearest college—are expected to show a preference for attending the college nearest their homes, provided the educational opportunities offered are comparable to those of other institutions. This latter condition will not be met for those seeking professional training which will remain at the University of British Columbia. Taking these factors into consideration, allocations were made to existing and proposed institutions for both 1965 and 1971 as shown in Columns 1 and 3 in Table 21.

With projections made for the first-year enrolment at existing and proposed institutions, the final step was to project the total enrolment of each institution. This involved the determination of the number of students in each year of studies offered at each institution. In the absence of any other data,

the totals shown in Columns 2 and 4 of Table 21 were derived on the basis of the disposition of the 1960 freshman class and those arriving for the first time from Grade XIII at the University. For the University additional allowance was made for those students coming from all areas of the Province to begin professional training (assumed to be ten per cent of each regional freshman-Grade XIII pool), transfers from other provincial institutions, enrolment in the graduate school, and students from outside the Province.

The derivation of these projections of enrolment has been made on a different basis from those previously available. By approaching the problem from a regional point of view, deriving the student pool from school enrolment (in grades other than Grade XII) and allowing for in-migration, it may be expected that the results are more refined than previous estimates based upon gross provincial or national totals. Nevertheless, the methods used here have not been fully tested by experience, and the figures in Tables 20 and 21 may suggest too great a precision. It can certainly be claimed, however, that they are of the right order of magnitude. In addition, they confirm the urgency of the situation before us. They provide an adequate basis for decentralizing higher education in the Province in a manner compatible with the interests of the greatest number of young British Columbians.

TABLE 20. FIRST-YEAR ENROLMENT BY REGION

Region (School Districts by number)	ACTUAL 1961			PROJECTED 1965			PROJECTED 1971		
	Student Pool (Gr. 8, 1956 plus in-migration) (1)	First Year-Grade XIII 1961 (2)	First Year-Grade XIII as Percentage of Student Pool (3)	Student Pool (Gr. 7, 1960 plus in-migration) (4)	First Year-Grade XIII as Percentage of Student Pool (5)	First Year-Grade XIII 1965 (6)	Student Pool (Gr. 2, 1960 plus in-migration) (7)	First Year-Grade XIII as Percentage of Student Pool (8)	First Year-Grade XIII 1971 (9)
VANCOUVER-LOWER FRASER VALLEY									
1. Vancouver 37(pt.), 38, 39, 44(pt.), 45, 48, U*.	5627	2366	42	8509	Low 42 High 45	3600 3850	8300	Low 45 High 48	3700 4000
2. Western Lower Fraser Valley 35, 36, 37(pt.), 40, 41, 42, 43, 44(pt.).	4548	1181	26	7145	Low 26 High 29	1860 2075	8200	Low 29 High 40	2400 3300
3. Eastern Lower Fraser Valley 32, 33, 34, 75, 76.	1095	226	21	1510	Low 21 High 21	320 320	1737	Low 21 High 30	370 530
VICTORIA 61, 62, 63, 64, 65, 66, U*.	2133	760	36	3066	Low 36 High 38	1100 1160	3303	Low 38 High 40	1260 1320
CENTRAL VANCOUVER ISLAND 67, 68, 69, 70, 71.	1139	281	25	1715	Low 25 High 25	430 430	1862	Low 25 High 30	470 560
OKANAGAN					Low 27	385		Low 33	470
1. Central 15, 22, 23, 77.	1043	287	27	1433	High 33	470	1414	High 38	540
2. Peripheral 12, 13, 14, 16, 17, 18, 19, 20, 21, 78.	808	199	25	1100	Low 25 High 27	275 300	1151	Low 27 High 30	310 345
KOOTENAYS					Low 30	360		Low 33	380
1. Central 7, 8, 9, 11.	891	144	25(30)*	1198	High 33	400	1144	High 35	400
2. Peripheral 1, 2, 3, 4, 5, 6, 10.	670	143	22(25)*	941	Low 25 High 25	240 240	1004	Low 25 High 30	250 300
KAMLOOPS-SOUTH CARIBOO					Low 38	270		Low 38	270
1. Central 24.	375	143	38	717	High 38	270	710	High 40	285
2. Peripheral 25, 26, 27, 29, 30, 31, 82.	362	16	4	595	Low 4 High 6	25 35	918	Low 6 High 10	55 90
CENTRAL INTERIOR					Low 16	190		Low 20	345
54, 55, 56, 57, 58, 28.	754	118	16	1202	High 20	240	1733	High 25	430
COAST 46, 47, 49, 50, 51, 52, 53, 72, 73, 74, 79, 80, U*.	1042	154	15	1539	Low 15 High 20	230 310	1841	Low 20 High 25	370 460
PEACE RIVER-AND					Low 10	75		Low 10	105
NORTH 59, 60, 81, U*.	437	41	10	763	High 10	75	1048	High 16	170
TOTAL	20,924	6134		31,433	Low 9360 High 10,175		34,365	Low 10,755 High 12,730	

*U—unattached schools.

TABLE 21. PROJECTED FIRST-YEAR AND TOTAL ENROLMENT BY INSTITUTION

INSTITUTION	1965		1971	
	FIRST-YEAR (1)	TOTAL (2)	FIRST-YEAR (3)	TOTAL (4)
University of B.C.	Low 3410	13,330	Low 2630	16,500
	High 3665	13,585	High 3025	19,350
Victoria 4-year	Low 1185	2920	Low 1360	3485
	High 1275	3010	High 1460	3745
Western Lower Fraser Valley 4-year*	Low 2045	2320	Low 2370	5840
	High 2235	2510	High 3115	7615
Okanagan 4-year*	Low 575	685	Low 760	2215
	High 680	790	High 870	2555
Kootenay 2-year	Low 445	500	Low 480	820
	High 480	535	High 540	925
Greater Vancouver 2-year	Low 900	1440	Low 1370	2270
	High 1000	1540	High 1470	2420
Eastern Lower Fraser Valley 2-year	—	—	Low 430	710
			High 620	1020
Central Vancouver Island 2-year	—	—	Low 470	770
			High 565	935
Kamloops 2-year	—	—	Low 270	445
			High 305	505
Central Interior 2-year	—	—	Low 355	605
			High 455	780
Grade XIII	Low 740	740	Low 200	200
	High 775	775	High 240	240
Subtract Kootenay Students from Public Schools to Notre Dame College	Low (60)		Low (60)	
	High (65)		High (65)	
TOTAL	Low 9300	21,935	Low 10,695	33,860
	High 10,110	22,745	High 12,665	40,090

* In 1965, only first two years will be enrolled. Second-year enrolment is assumed to be "transfers" from 1964 Grade XIII.