

THE DEVELOPING TREND TOWARDS SHORT-CYCLE
TERTIARY EDUCATION

A comparative study of this trend in selected countries including its links with other forms of tertiary education and its possible application in South Africa.

By

THEODORE CLIVE SHIPPEY

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DECLARATION OF ORIGINALITY

I hereby declare that the whole of this thesis, unless specifically indicated to the contrary in the text, is my own original work.

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GLOSSARY OF ABBREVIATIONS

AA	- Associate in Arts
AACJC	- American Association of Community and Junior Colleges
AAJC	- American Association of Junior Colleges
AP	- Advanced Placement Programme
AUT	- Association of University Teachers
BA	- Bachelor of Arts
BCom	- Bachelor of Commerce
B Ed	- Bachelor of Education
BGHS	- Baukasten-Gesamthochschule (West Germany)
BSc (Phar)	- Bachelor of Science (Pharmacy)
CAAT	- College of Applied Arts and Technology (Ontario, Canada)
CAT	- College of Advanced Technology (United Kingdom)
CATE	- College for Advanced Technical Education (South Africa)
CATV	- Community Antenna Television (Cable Television)
CBI	- Confederation of British Industry
CEEB	- College Entrance Examination Board
CEGEP	- Collèges d'Enseignement Général et Professionnel
CIS	- Chartered Institute of Secretaries
CLEP	- College-Level Examination Programme
CNAA	- Council for National Academic Awards
CNESER	- Conseil National de l'Enseignement Supérieur et de la Recherche
CPEP	- College Proficiency Examination Programme
CPRC	- Coloured Persons Representative Council
CSE	- Certificate of Secondary Education
CUP	- Committee of University Principals
CUNY	- City University of New York
DES	- Department of Education and Science
DEST	- Diplôme d'Etudes Supérieures Techniques
DEUG	- Diplôme d'Etudes Universitaires Générales
Dip HE	- Diploma of Higher Education
DIGEC	- Direction Général de l'Enseignement Collégial
D Optom	- Diploma in Optometry
DNE	- Department of National Education

DUEL	- Diplôme Universitaire d'Etudes Littéraires
DUES	- Diplôme Universitaire d'Etudes Scientifiques
EEC	- European Economic Community
EDP	- Electronic Data Processing
ETS	- Education Testing Service
ETV	- Educational Television
FE	- Further Education
GAS	- General Assembly Session
GCE	- General Certificate of Education
GNP	- Gross National Product
HEW	- Health, Education, and Welfare (U.S. Department of)
HMSO	- Her Majesty's Stationery Office
HND	- Higher National Diploma
HSRC	- Human Science Research Council
ISS	- Individual Study Session
ITV	- Instructional Television
IUT	- (French) University Institutes of Technology
JACCTT	- Joint Advisory and Co-ordinating Committee for Teacher Training
JCE	- Johannesburg College of Education
JMB	- Joint Matriculation Board
MIT	- Massachusetts Institute of Technology
NELP	- North East London Polytechnic
NTC	- National Technical Certificate
NUS	- National Union of Students
NVETA	- Northern Virginia Educational Television Association
OECD	- Organisation for Economic Co-operation and Development
ONC	- Ordinary National Certificate
OND	- Ordinary National Diploma
Ph D	- Doctor of Philosophy
RC	- Regional College (Norway)
SAS	- Small Assembly Session
SAIRR	- South African Institute of Race Relations
SCI	- Short-Cycle Institution
SUNY	- State University of New York
TV	- Television
UCLA	- University of California, Los Angeles

- UER - (French) Unités d'Enseignement et de Recherche
- UGC - University Grants Committee
- UK - United Kingdom
- UNISA - University of South Africa
- US - United States
- WICHE - The Western Interstate Commission for Higher Education
- YMCA - Young Men's Christian Association
- YWCA - Young Women's Christian Association

DEFINITION OF TERMS

Tertiary Education - It is now generally accepted that this stage follows logically after primary and secondary education. It is used to indicate the full range of educational opportunities available throughout the third or post-secondary stage and this includes universities, technical colleges, colleges of education, polytechnics, community colleges, four-year colleges and other institutions of this nature.

Throughout the thesis this term has been used in its all-embracing sense (unless otherwise indicated as in Chapter Six in pages 338-340). The word "tertiary" has been chosen in preference to words such as "higher", "further", "advanced" and so on (although these words have, on occasion, been used), since it is less confusing and it does not vary greatly in its usage from one country to another.

Higher Education - This term is used differently in many countries. In the United States it is used to indicate all post-secondary institutions irrespective of their relative position in the academic hierarchy of institutions. In the United Kingdom it was traditionally used to indicate the autonomous university sector but since the advent of the Robbins Report in 1963, it is being increasingly used to cover the full- and part-time work of universities, colleges of education and further education institutions so far as the last are concerned with "advanced" courses. In some European countries "higher education" still denotes the selective, elitist university sector only. Thus it can be seen that there is not general agreement about the use of this term.

The term "higher education" has been retained on occasions in this thesis because it seemed to be appropriate within the context being referred to and because of its traditional usage in that particular educational system.

Quaternary Education - In order to differentiate genuine "higher" or "advanced" work from the large number of institutions and qualifications which are available at the lower tertiary level, some writers have used the word "quaternary" to indicate a fourth level of education.

In this thesis the term "quaternary education" has been used to indicate upper-level university work which is beyond the capacity of the mass and is clearly meant only for the chosen few.

C H A P T E R O N E

RATIONALE AND APPROACH

1. INTRODUCTION - AIM, SCOPE AND RELEVANT HISTORY

A. Aim and Scope

One of the primary aims of this thesis is to examine the American Community College and other short-cycle tertiary education institutions in their own context and also to review their impact on tertiary education in selected countries and to consider the possibility of adapting and utilising some of these concepts within the framework of tertiary education in the Republic of South Africa.

The formulation of institutional rôle is not easily accomplished and the study of institutions is in some ways comparable to the study of personality. In both instances it is necessary to see the enterprise as a whole and to see how it is transformed as new ways of dealing with a changing environment evolve. Firstly, an institution's rôle comes both from within and without; it is the product of both internal and external forces. No matter what the commitment is from those responsible for a social institution, this inner commitment is subject to societal pressures from without. Secondly, the goals of an institution must be realistic since the rôle of an institution is limited to that which it is competent to achieve. And in the third place, the setting of goals which are in line with the external environment is extremely important.

Determining the rôle of an educational institution is difficult and particularly so in the case of the community college. If institutional rôle depends so greatly upon the context in which the organisation operates, the community college will have to address itself to those social forces which in the next decade are likely to influence tertiary education. Commenting on the outside forces which shape the character of the community college Clark states:

"In its lack of autonomy, the open door college has the definition of character taken away from planning and

professional control and diffused to external sources. Thus we find a type of formal organisation determined to a large degree by context and hence to be explained largely in terms of sociological determinism. Institutional leadership is minimised, and direction by context, maximised. Along a continuum of organisational power in environmental relations, ranging from the organisation that dominates its environmental relations to one completely dominated by its environment, the public junior college tends strongly towards the latter extreme." (1)

Quite clearly there are similar social forces involved either in Europe, the United States, Japan, Canada or in South Africa - the population growth, which in some instances is now beginning to decline, the tendency for an increasing proportion of college-age youth to seek some form of tertiary education, the accelerated social complexity of our times, the economic and technological advances, and the explosive surge of knowledge. There are also certain beliefs which have accompanied these forces - such convictions as: the value to a nation of maximally-developed human talent; the desirability of equalising educational opportunities (2); and the necessity that an individual should gain as much education as possible in order to deal with the complexities of his personal, social and occupational life.

Certain developments which have reflected these beliefs have also been discernible as have the various means adopted to encourage education and to equalise educational opportunities. These include the growth in the diversity of institutions of tertiary education in the United States, including the community college, to serve the great variety of students. They also include the various schemes for

(1) Clark, B.R. - The Open Door College: A Case Study
New York: McGraw-Hill, 1960. (p. 175)

(2) The South African Government, in applying its ideological concept of apartheid, is attempting to provide educational opportunities for non-whites and whites in separate areas and in their own non-white or white schools.

financial aid to students in the form of loans and scholarships. It is also necessary to take into account developments such as the concern over meeting the enrolment demands of the next several years, the phenomenal growth in adult education, and the emphasis on training for new types of occupations arising from technological advancement. All this has been apparent and there seem to be no signs of deviation from such trends.

It is within this context that short-cycle tertiary education institutions in Europe, Japan, Canada, the United States and South Africa have been examined.

In the process of examining the community college and other short-cycle tertiary institutions and trying to select suitable ideas for adaptation to the South African educational system, it has been necessary to consider the whole concept of transference of educational systems (or parts thereof) to other nations. Inevitably the everpresence of change in education and society has been introduced and analysed and developments in European and other countries of non-university higher education, generally termed Short-Cycle Higher (or Tertiary) Education, have been reviewed. The conference on Short-Cycle Higher Education, which was arranged by the Organisation for Economic Co-operation and Development and held in Grenoble during November 1971, has focused much attention on this period of post-high school study. The important rôle played by community college protagonists at this conference, has made consideration of short-cycle tertiary education processes a vital and major part of this thesis.

Japan has led the world in post-war attempts to utilise the American Community College concept and account must be taken of her findings and adaptation of a peculiarly American institution to an oriental society. For this reason the author visited Japan and attempted to review the situation by personally experiencing conditions and by visits to Japanese colleges.

This thesis has been based on the results of data and experiences gained during the second half of 1971 when the

author visited Europe, the United States, Canada, Japan and other countries in an effort to present a thesis constructed mainly from primary sources. The greatest portion of time and concentration was devoted to visiting fifty-five community colleges in thirteen American States (including Hawaii) and in Japan.

Underlying the whole study is the basic assumption that the United States, with more than a hundred years of community college experience, has many valuable lessons to convey to a younger less-developed, less-diverse education system such as that in South Africa. It has never been the author's intention to recommend the creation of a community college system in South Africa but merely to examine the concept as objectively as possible and to make recommendations. To have visited the United States with the preconceived notion that the community college would transplant happily to a very different social and political environment would have been unwise. What has emerged from six months of continuous travelling and visiting and many years of study of short-cycle tertiary institutions, is the conviction that some aspects of these colleges could have considerable instrumental value in South Africa if adapted intelligently. This then is the object of the thesis - to sum up the findings of an attempt to understand the community college and other short-cycle tertiary institutions within the context of their mother countries and to conjure up a picture of the South African educational scene as it could possibly include and utilise some of these key concepts.

Mention has also been made of the detailed study of, and visits to, institutions of tertiary education in South Africa. Because of their similarity of function to community colleges, and other short-cycle tertiary institutions in Europe and elsewhere, the colleges for advanced technical education in South Africa have been singled out for special examination and for the greatest concentration of attention.

Since tertiary education for the three non-white groups (Bantu, Coloureds and Indians) is but little developed in

South Africa, the focus of attention has fallen on institutions for white peoples. However, reference has been made to the significance and possible impact of short-cycle tertiary education ideas on the non-white peoples of South Africa.

B. Relevant History

(a) The American Community College (1)

Originating in Massachusetts about the middle of the nineteenth century, the private junior college concerned itself mainly with preparing students for transfer to a four-year college or university. However, by the start of the twentieth century, and with the advent of public junior colleges and so-called terminal courses in addition to the traditional transfer courses, a gradual change took place in these colleges throughout the United States. A slow but steady shift towards greater community involvement and greater response to local industrial and commercial needs occurred and the junior college emerged from its confinement in an exclusive, expensive, limited, private sector, and assumed a fuller place as a public community college with a comprehensive function.

The Second World War helped to accelerate change in these institutions and by the 1950s and 1960s the public community college held sway over this post-secondary stage of education. So great has been the increase in numbers of community colleges and their students that this sector of tertiary education has come to be considered as an essential part of the educational systems of most states.

The community college of the 1970s is a public institution financed mainly by state funds (with some local contributions) and awarding a number of associate degrees which can lead on to the completion of a bachelor's degree upon transference to an appropriate institution.

(1) For a detailed chapter relating to this topic please refer to the author's M Ed thesis: Shippey, T.C. - An Analysis of Some Aspects of American Junior Colleges (Unpublished M Ed thesis, University of Natal, 1970)

(b) Other Short-Cycle Tertiary Institutions

(i) Japanese Junior Colleges

The junior colleges in Japan came into being after the Second World War and resulted mainly from influences exerted by American educators and military authorities. These institutions are predominantly small private colleges mainly for women and lacking the comprehensiveness of their American counterpart.

Their history is short and their rôle is changing and certainly not yet determined amidst the rapidly growing tertiary sector. They do not perform the same transfer functions as in the United States and their orientation is more towards teacher education. Japanese Junior Colleges cannot really be viewed in the same light as other short-cycle tertiary institutions since the factors determining who shall enter tertiary education are certainly exclusive to Japan.

(ii) Short-Cycle Colleges in Europe

As in Japan the development of short-cycle colleges in Europe has been mainly post-Second World War. Since there are a large number of countries and institutions involved it would be unwise to attempt a historical description of them in a brief introductory section. The development and nature of selected short-cycle colleges in Europe will be fully described in Chapter Five.

(iii) Short-Cycle Tertiary Education in Canada

Although the origin of the junior college concept in Canada is obscure, it has been established that there were a few institutions in existence at the start of the twentieth century that could be called junior colleges. However, these institutions were widely scattered and far from firmly entrenched in the tertiary education system.

In 1925, the Tenth National Conference of Canadian Universities and Colleges agreed to appoint a standing committee to study "Junior Colleges". Also in 1934, President Sherwood Fox and others of the University of Western

Ontario reported their findings on a questionnaire which had been sent to nineteen institutions of higher learning. Their article was entitled "Report on the Junior College Situation in Canada to 1934", and contained the information that there were at that time eleven junior colleges in Canada.

According to Canadian Institutions of Higher Education, 1958-1959, there were by then forty-nine junior colleges, more than half of which were French-language institutions situated in Quebec.

More than half of the approximately 110 institutions of a community or junior college type were established after 1960 and their history is therefore very brief.

The Colleges of Applied Arts and Technology of Ontario and the Collèges d'Enseignement Général et Professionnel, which are examined in this thesis, are both of very recent origin having started in 1965 and 1967 respectively.

(iv) Colleges for Advanced Technical Education in South Africa

In their present form these colleges date from the promulgation of the Advanced Technical Education Act No. 40 of 1967. This Act made possible the establishment of colleges for advanced technical education at the Cape Technical College in Cape Town, the Natal Technical College in Durban, the Pretoria Technical College in Pretoria, and the Witwatersrand Technical College in Johannesburg. These institutions were declared under the Act to be places of tertiary education.

More recently the Vaal Triangle College for Advanced Technical Education near Vanderbijlpark and the Port Elizabeth College for Advanced Technical Education were added to the original four colleges. The elevation to advanced status of the M.L. Sultan Technical College for Indians in Durban and the Peninsula Technical College for Coloureds at Belville near Cape Town raised the total to eight. Lastly came the creation for the Bantu of the Mmadikoti College for Advanced Technical Education which is situated at Seshego near Pietersburg in the Transvaal, and the final total now stands at nine.

There are also a certain number of technical colleges, both white and non-white, which offer a limited selection of vocational or technical education at tertiary level in areas where there are no colleges for advanced technical education. However, these institutions are not colleges for advanced technical education since they provide mainly secondary level work and apprentice training.

2. METHODS OF APPROACH (1)

In examining the methodological techniques used in this study it is essential to remain vitally aware of the "cultural dynamic" which is hard to measure in plain statistical terms but which is of great significance. Some of this complex cultural dynamic structure may be rationally justified, but much of it is pure legacy which sometimes relates to custom, to convenient rules, to sub-rational awareness of various kinds, to codes which once were operative but now are not, or to the types of material control which man exercises over his environment in the designing of the future. Thus in the study of educational phenomena such as the community college and other short-cycle tertiary institutions one must recognise more fully the nature of the overall pattern in which these phenomena exist.

With these factors in mind the techniques employed to describe, analyse and transpose some concepts from short-cycle tertiary institutions to the South African context have taken into account the similarities and differences in the political, social, economic and historical backgrounds of the various countries involved. To try to plan tertiary education in, for example, South Africa, without reference to the comparative insights which can be gained from one important facet of the American educational multi-structure such as the community college, would be like launching an economic plan without any knowledge of local industry, the corporate organisation of

(1) This section has been influenced by the ideas expressed by E.J. King in his book entitled Comparative Studies and Educational Decision London: Methuen Educational Ltd., 1968.

employers and unions, or the internationally available examples from other places.

Comparative studies in education will at times, inevitably be uncertain or a rule-of-thumb affair, for all the social sciences are to some extent empirical rather than exact sciences. This study of short-cycle tertiary education has not been written with too sanguine an expectation of what can be "scientifically" determined and predicted as being of value to transpose to the South African educational scene. It would not be wise to overstep the bounds of reliability, especially if one realises the limitations on objectivity which inevitably hamper any study of human beings working out their aims in complicated cultural contexts.

In order to make more balanced decisions for the future it seems clear that comparative studies are indispensable for any examination of human problems or any evaluation of a particular phenomenon - in this case the community colleges and other short-cycle tertiary institutions. The main reasons for needing this insight are that we seem incapable of regarding anything with complete objectivity but make all our observations through the nexus of human and social involvement. Even if we could view things in a detached way the world is now a place of such rapid and total change that the past does not necessarily present us with many reliable pointers for the future.

If comparative education is to be an effective partner in the social sciences it must go into action with them and offer useful information, clarify some issues and suggest possible causes for events or decisions, propose hypotheses or areas for further enquiry, and provide an overall picture of local complexes and transcendent needs. Comparative education informs the public about what education adds up to in a series of pertinent experiments elsewhere. Such experiments are relevant to current needs in education, and balanced information on these endeavours, in an attempt to provide answers to problems, does not deal in laws but rather

in approximations and contingencies. By making use of a comparative education approach the study of an educational institution in its national and international milieu will hopefully bring two advantages: (i) a sense of the cultural "wholeness" or "educational idiom" of each area or occasion on which educators or people in authority must act; and (ii) a knowledge of the cross-cultural dimension resulting from the comparison of what seem to be similar factors or problems viewed in a variety of relevant contexts (in this case relating to short-cycle tertiary education in the United States, South Africa and other selected countries).

3. APPLICATION OF RESEARCH TECHNIQUES

In an attempt to simplify the research techniques used in this thesis a basic four-stage approach has been devised.

First, a foundation of broad concepts and trends has been laid which is wide-ranging and establishes some of the principles upon which assumptions later in the thesis have been based. The essential problems underlying almost all systems of tertiary education have been briefly analysed as have the problems experienced in the establishment of an intermediate system of short-cycle tertiary institutions.

Second, the American context has been examined more closely since this is probably the oldest and best-established group of short-cycle tertiary institutions and also because it seems logical to progress from a broad foundation of principles to a specific application of these fundamental issues. Specific concepts within the American Community College systems have also been considered since they may possibly be adaptable to other countries because of their essential value.

Third, since the final stage will be the particular application of certain short-cycle and other tertiary education concepts in South Africa, it would appear worthwhile to consider how some other countries have applied these concepts before trying to apply them to a specific country. For this reason a number of countries have been singled out

because of their varied and interesting application of short-cycle concepts to their own systems.

Fourth, the logical culmination of the movement from the establishment of broad principles and problems to specific applications of those principles in selected countries could naturally be the adaptation and utilisation of certain aspects of short-cycle systems in a country which has not previously applied these concepts. The assumption underlying this progression from stage three to four is that there could be considerable instrumental value in first examining the mistakes and experiences of a number of countries before modifying and adapting certain concepts for application in a new situation.

Since this thesis topic has proved to be situated at the junction of many of the social sciences and because the examination of this topic has necessarily included a comparison of many of the techniques and methods of investigation in education employed in a number of countries, it could well be said to exist within the confines of comparative education. Support for this assumption may be found in a statement made by Noah and Eckstein:

"The territory of comparative education has been defined as the intersection of the social sciences, education studies, and the cross-national dimension, so that the hallmark of work properly claiming to be comparative education is that it lies neatly within that intersection." (1)

This thesis has been prompted by the desire to understand our neighbours in the United States and other countries and not merely (in an educational tourist frame of mind) to learn what they do. It also stems from the hope that some instrumental benefit will accrue from examining American Community Colleges (and other similar institutions) and comparing them with South African tertiary educational institutions. The purpose of this study was neatly summed

(1) Noah, H.J. and Eckstein, M.A. - Toward a Science of Comparative Education London: The Macmillan Co., 1969. (p. 184)

up by Hans when he declared that comparative education is "not only to compare existing systems but to envisage reform best suited to new social and economic conditions.... Comparative Education quite resolutely looks into the future with a firm intent of reform.... Thus our subject has a dynamic character with a utilitarian purpose". (2)

(2) Quoted in Mallinson, V. - An Introduction to the Study of Comparative Education London: Faber and Faber, 1957, p. 59, from the first volume of the "British Journal of Education Studies".

C H A P T E R T W OSHORT-CYCLE TERTIARY EDUCATION1. SHORTCOMINGS IN EXISTING STRUCTURES

In most countries, and more particularly in Europe, elitist higher education still persists and it is the inability of the elitist institutions to adapt to the changing situation and problems in higher education which is one of the causes of the crises and tensions which almost all higher education systems are experiencing. In Europe, more specifically, these systems present some of the following deficiencies:

A. Insufficient Diversification

The existing systems are not easily accessible (usually only through a particular type of academic secondary school); they offer a very limited number of patterns of study (insofar as duration, types of attendance, and kinds of degrees awarded is concerned) and a rigidly fixed number of fields of study (1). The homogeneity of structure is in marked contrast with the widely diversified fields of interest, abilities and motivations of the extended student population, as well as the greatly increased range of qualifications and skills required by modern economies.

The whole new field of functions which higher education has to cope with in contemporary society, beyond the traditional rôles of teaching and research normally assigned to it, must be examined in terms of the central rôle which knowledge now plays in the overall development of society and the closer links, and direct participation, in the economic, social and

(1) Less than 20 years ago the University of Bonn had one chair of sociology and 24 chairs of oriental languages! Sociology was only introduced into the French universities in 1958 but this new addition was not made at the expense of the old procedures. The course content and teaching methods were made to conform to the old norms and patterns. When sociology was finally added it was taught like philosophy.

cultural development of the surrounding community which this implies for higher education. Clark Kerr stated this point clearly: "Knowledge has certainly never in history been so central to the conduct of an entire society. What the railroads did for the second half of the last century and the automobile for the first half of this century may be done for the second half of this century by the knowledge industry: that is, to serve as the focal point for national growth (1).

In practice, all systems and especially the elitist group of institutions, have been obliged to offer a certain amount of differentiation (still rather rigid however) as a result of the impact of the technological revolution and of subsequent economic and social developments. New institutions providing new fields of post-secondary education with different entrance conditions and/or of different duration from universities, were set up in large numbers in many countries. In some instances this was achieved by upgrading former secondary schools but most commonly by new creations. However, in most countries this attempt at differentiation led to a division of the system into two more or less self-contained parts - the "noble" and the "less noble" sectors of tertiary education. This, in turn, has resulted in new inefficiencies and rigidities in respect of both the concept of equality of opportunity and the requirements of economic and scientific progress.

The "noble" institutions have an almost natural tendency to ignore or neglect new ideas introduced by or through the "less noble" establishments, while the latter, even when imaginative and creative at the outset, tend eventually to imitate the prestigious and traditional institutions and thus they discard their initial function and character. Institutions such as the German Gesamthochschule or the Danish University Centre both aim at establishing comprehensive organisational units which include all the previously separated forms of post-secondary education i.e. short-cycle and long-cycle,

(1) Kerr, C. - The Uses of the University Cambridge, Mass., 1964. (p. 88)

academically- and vocationally-oriented, part-time and full-time. Diversification is thus expected to take place within a single institutional type, a new integrated or comprehensive university, which would become polyvalent not only in regard to the range of disciplines offered, but also in respect of the forms and levels of teaching and study.

This German and Danish concept in part represents an attempt to eliminate the conflict between "noble" (university) and "less noble" (non-university) components of tertiary education. The university sector, focussed on abstract and disinterested study and on disciplines (e.g. law and medicine) is considered more prestigious than the non-university sector which emphasises the teaching of knowledge and skills usable directly in a wide range of both new and old professions. This dichotomy still exists at the present stage of development of European societies and is deeply rooted in institutional structures and in social attitudes.

There is no certainty that in newly created comprehensive organisational units these conflicts between university and non-university institutions would automatically disappear. Profound changes will have to take place in the attitudes of universities and they will have to accept as equal members the formerly "less noble" institutions and, even more difficult than this, they will have to adapt their own regulations and functions in order to achieve the required integration with non-university establishments.

In view of the universities' traditional resistance to change, and because of their zeal in guarding their autonomy, it is not surprising that some governments prefer to put their major effort into the planning of the expansion and reform of the non-university sector. This means maintaining a type of binary system for a while, with a gradual effort being made to make the non-university establishments "more noble" by increasing their size and by providing liberally the attributes of nobility i.e. higher status and research opportunities for teaching staff and possibilities for students to achieve university level degrees.

B. Financial Problems

Almost all systems of tertiary education are experiencing great financial difficulties. It may well be that the proportions of GNP allocated to tertiary education within the public budget can still be greatly increased, as in the past. However, it is reasonably certain that the rising enrolments and rising unit costs (two trends evident almost everywhere), which have led in Europe to an average annual increase of expenditure of between ten and fifteen per cent, cannot continue indefinitely and that better use will have to be made of available resources.

The present disjointed European systems have developed by historical circumstances and have usually been the result of unco-ordinated responses to stimuli and pressures of both a formal and informal nature. This fact makes more efficient handling of resources extremely difficult. Add to this the knowledge that liaison and exchange and pooling of resources and co-ordination would have to take place between institutions of different levels which, up to now, despite their often complementary functions and geographic proximity, have never worked together, and the problem becomes vast. Even if effective pooling of resources and other financial savings, could, and did, take place, the resultant savings, though real, would be limited and could not necessarily prevent the continued rise of unit costs. Only profound structural changes (such as the shortening of the duration of certain courses), a greater mingling of formal education and work experience, and a greater effectiveness of short-cycle tertiary education, could achieve profound economies of resources. Whatever financial or other stringencies are proposed none of these measures can easily take place in a disjointed and rigid system which is still dominated by the value structure of elitist higher education.

C. Capacity for Change

Existing elitist systems have been characterised by a certain lack of flexibility and this does in fact deprive them also of the necessary capacity for change.

The creation of new universities, and reforms in teaching methods, the degree structures or the decision-making procedures within certain university institutions, do represent innovations which have recently been introduced into nearly all systems. However, in few instances have these partial changes affected the system as a whole and at best they have remained peripheral, isolated efforts which have often been negated or distorted by the traditionalist. It seems reasonable to assume that existing structures which inhibit mobility of students, teachers and finance, also have a limited receptivity to innovation, and change and limit its diffusion.

D. The Demand for New Personal Values

The student unrest of the 1960s has clearly shown that present systems have not been able to respond adequately to the quest of new generations of young people for "self-fulfilment", for "individual development" and for "quality of life". Although these objectives are still vague and have only emerged more recently they could prove to be crucial issues. Much more is involved in this quest than inter-institutional linkages and institutional structures. It is rather the relation of the individual to society in his development process and concerns the problem of relevance of studies, of pedagogical relations, and the whole concept of the learning situation. It is hardly likely that any of these fundamental issues will be really resolved without great changes in the overall institutional framework. An answer can be provided for small groups of students by means of pilot colleges and schemes, and they can serve as models. However, because of the diffusion process, pilot projects cannot solve the general social phenomenon of changing attitudes and expectations of young people. "Blind alleys, degrees without corresponding job opportunities, teaching not related to aptitudes and interests, choices made prematurely and irreversibly, dropping out virtually equivalent to complete loss of time and effort (and self-respect) - all these contribute to the causes that lie behind student dissatisfaction; and they can all be traced, in one way or another, to the existing structures of higher

education reflecting a framework unadapted to the pursuit and generalisation of values such as those which the new student generation advocated". (1)

The need for major structural changes is even being felt in the United States where expansion at tertiary level has reached the highest level and where quantitatively mass tertiary education is already a reality. The United States with enrolment ratios of forty per cent often faces similar problems and difficulties as countries with very low ratios. This fact therefore indicates that growth, as unavoidable and indispensable as it may be, is only one of the necessary conditions in the movement towards mass tertiary education. The various state systems in the United States facilitate the advent of mass tertiary education structures. The elements necessary for such structures could be found in the United States as early as the end of the 19th century and included diverse curricula, mobility of students and the service function of Land Grant Colleges and some universities. It could therefore be assumed that these elements brought about the relatively high enrolment ratios already achieved in the United States many years ago. (2) The question can therefore be asked whether the present problems encountered by tertiary education in the United States are a corollary of a new stage - a movement from mass to universal tertiary education - or whether these problems have developed from an imperfect or partial assimilation of mass tertiary education requirements and from a remnant of some of the components of elitist structures?

2. THE CHANGING NATURE OF ELITIST HIGHER EDUCATION

In almost all developed countries the quantitative growth during the last twenty years, combined with a number of other factors, has created a situation in which most of the problems

(1) Organisation for Economic Co-operation and Development - Towards New Structures of Post-Secondary Education Paris: June 1971. (p. 31)

(2) In 1970 no European country had enrolment ratios which the United States had reached in 1955.

and tensions and transformations in the field of tertiary education, are in some way connected with the breakdown of the old order and the linear pattern of "more of the same" development. The nature of most of the problems encountered today is radically different from those encountered in the past and although in some countries mass tertiary education will not be a reality for many years a turning point has been reached in nearly all countries which implies the end of elitist higher education. There is little doubt that a limited number of institutions of an elitist type will remain in some systems but world educational patterns can no longer be sustained on an elitist basis because a large majority of people cannot, and do not wish to, support such a system.

New problems have led to the gradual withdrawal of elitist education and these same problems constitute a foretaste of those to be faced in a mass tertiary education system and may be summed up as follows:

- (i) Tertiary education is now expected to fulfil a much larger and more varied number of functions than those assigned to it in the past. For this reason its goal and value structure is expected to differ from the goals and value structures of the traditional higher education systems of the past.
- (ii) There has not only been a huge expansion of enrolments resulting from the demand for tertiary education but a great change has occurred in the clientele of tertiary education. There has been a greater variety and heterogeneity of abilities, aptitudes, expectations and motivations of students in regard to their attitudes towards their future education, professional careers and life in general.
- (iii) In the same way that capital replaced land in the 19th century so the part played by tertiary education as a key factor of production in terms of economic theory becomes progressively more important.
- (iv) Owing to the vast mass of resources it requires in personnel and budgetary terms, tertiary education is assuming a political weight which is incommensurate with its traditional rôle.

The degree to which these four problems have asserted themselves varies greatly from one country to another but they nevertheless appear to be present in most countries irrespective of the relative levels of expansion of their tertiary education systems. The end of elitist education at this level seems thus to have been reached even in countries where accelerated growth started relatively late and where they are not yet enrolling a large proportion of the age group in tertiary education.

Most developed countries do appear to be at an intermediate and critical stage between elitist and mass tertiary education. Elitism is being abandoned under the pressure of numbers and of a series of socio-economic factors while mass tertiary education requires structures, content and organisational arrangements which have only partly been identified and certainly not developed yet. The main task will be to devise ways of ensuring that this transition from elitist to mass tertiary education takes place in the least disturbing way.

3. TRENDS IN POST-SECONDARY EDUCATION

A. Future Growth

An analysis of the development of post-secondary education since World War 11 indicates that despite the rapid world-wide growth of the past there is still great potential for further expansion, especially in Europe and in underdeveloped countries.

Except for the United States, and possibly Canada, post-secondary education is quite clearly only available to a minority of the age group and this would appear to remain so for some years to come. The most developed Western European nations have only between 12% and 20% of their population of a given age in various forms of tertiary education (as against 35% to 45% in the United States). In most European countries less than 10% of an age group are enrolled in institutions of a post-secondary nature and less than 5% receives a university degree or its equivalent (as against 20% in the United States). It is precisely this fact that makes it reasonable to assume that, at least in Europe, there will be no decline in growth

rates but rather increased enrolments. Experience over the last two decades has shown that there is little correlation between the relative size of a system and its rate of development; in countries with relatively high enrolment ratios, growth rates have not tended to decline.

One of the most powerful factors contributing to the increase in enrolments at tertiary level has been the growth of secondary education and herein lies the greatest potential source of new expansion. None of the European countries, at present, has more than 50%, and most have less than 30% or even 20%, of its youth finishing secondary school and it is quite clear that the universalisation of primary education will lead to the expansion and universalisation of secondary education and hence to the growth and generalisation of tertiary education. Continued reforms in the entrance requirements to universities will help to reinforce this trend since there is a move away from restricting university entrance to graduates from certain academic secondary schools and great quantitative impact will be felt as admission to universities becomes possible from all branches of secondary education and even from among those who have not completed secondary schooling.

Yet another important potential source of growth may be found in the specific measures being taken by many governments to attenuate present inequalities of educational opportunity which result from social class barriers, regional or ethnic origin, or from sex discrimination. This has led to the creation of new tertiary educational institutions in regions where the absence of such facilities constituted a great restraint to satisfying potential local demand. Affiliated universities in Sweden, District Colleges in Norway, the large Bochum University of Germany and hundreds of community colleges in the United States all help to bring tertiary education opportunities nearer to those for whom, in the past, geographical distance meant a serious obstacle to attendance. The supply of new facilities inevitably leads to new demand.

Almost all policy statements have emphasised the acceptance of the equality of opportunity objective and the

preference given to social demand as a main criterion for the determination of what tertiary education facilities should be provided. The principle that "all who seek (post-secondary education) should be able to find a fully acceptable opportunity at the academic level for which they are qualified" (1) or that "courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so" (2), or the more liberal American view that adequate facilities should be provided "for all youth who can benefit from post-secondary study" (3), has been firmly established.

One of the most significant factors which relates to the amount of involvement in tertiary education of different social sub-groups is the educational level achieved by parents. It is now approximately one generation span from the start of the great expansion wave which took place in the early 1950s and more parents with post-secondary qualifications, or even with secondary school diplomas, inevitably means larger numbers of young people demanding entry into all forms of tertiary education.

B. Economic Restrictions

Some educational economists have suggested that as a result of the growing number of graduates, the direct monetary returns to higher education must decrease and that this could lead to a decline in individual demand for higher education. They have also suggested that since the apparent advantage of a longer education i.e. the salary differential, will decline and thus make tertiary education less attractive, this factor could result in a shift in the allocation of public resources towards, for example, real capital or other services.

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- (1) Formulation of the Norwegian Royal Commission on Post-Secondary Education (Ottossen Committee).
 - (2) Committee on Higher Education (Robbins Committee), Report London Cmnd 2154 (p. 8).
 - (3) "Planning of New Structures of Post-Secondary Education, Country Statement, United States of America", OECD. DAS/EID/70. 24/07.

There seems to be no empirical evidence, up to now, which can support such assumptions. Figures available in the United States reveal that for college graduates, relative wages have shown no downward tendency while for high school diplomates there is a slight upward trend. The following table provides evidence which refutes the suggested slowing-down tendency:

TABLE 1
RATIOS OF MEAN INCOMES FOR UNITED STATES MALES
BY SCHOOLING CATEGORIES, 1939 - 66

Selected Year	High School graduates to elementary school graduates	College graduates to high school graduates
1939	1.40	1.57
1949	1.41	1.63
1958	1.48	1.65
1959	1.30	1.51
1963	1.49	1.45
1966	1.56	1.52

Source: Zvi Griliches: "Notes on the Rôle of Education in Production Function and Growth Accounting" - Unpublished paper, University of Chicago, 1969.

The percentage of secondary school diplomates as a proportion of the 17 year-olds increased between 1939 and 1966 from about 50% to approximately 77% while the percentage of college or university graduates, as a proportion of the 24 year-olds, increased from 8% to 23% during the same period.

The fact that economic return did not diminish over this period despite the large increase in graduates in the United States (the first country to enter the stage of mass tertiary education) can probably best be explained as follows:

(a) The ability to innovate has more recently been stressed as an important dimension in education. The productivity of education would then be positively related to the size of the

technological gap (i.e. the difference between the technology of best-practice industries and average-practice industries) and the rate of change in technological progress. If then the technological gap is increasing and the rate of utilisation of technology is growing, the relative return to education will increase.

(b) The demand for education has increased because of the changing composition of production:

(i) as the quality and quantity of physical capital increases there is a corresponding increase in the productivity of skilled labour relative to unskilled labour.

(ii) increments in labour productivity and the skill level are positively related.

(c) The most skill-intensive industries are those which are expanding most rapidly.

(d) In the sense that the amount of learning per unit of resource input has risen, the quality of education itself may have increased.

It would seem likely that the emphasis on technological progress will be stressed now even more than in the years 1939 - 1966 and if, in fact, constant ratios between relative wages imply a widening of the wage-differences then it means that it is more profitable for a young person to invest in tertiary education today than it was in the 1930s.

More views in support of the theory that considerable gain is still to be had from the attainment of a degree are provided by Butcher and Rudd in a recent study:

" The evidence on the direct monetary returns to higher education seems to indicate the following."

"(a) Higher education appears to be a privately profitable investment opportunity, although its social profitability is more doubtful."

"(b) The returns to post-graduate education seem to be less than the returns to a first degree."

"(c) Constancy of rates of return to higher education over time, at a level comparable to that of alternative investment opportunities, is compatible with a rapid expansion of higher education."

"Moreover, when the external and non-pecuniary effects of education are taken into account, one cannot support the pessimistic view that higher education might not be a viable investment opportunity." (1)

It can safely be assumed that the present great demand for tertiary education corresponds to, and reflects, a particular value structure of society and that the individual expectations of higher earnings (i.e. the economic argument based on higher personal income) are an integral part but not the whole of it. It would also appear, from limited evidence, that the social demand for tertiary education takes place despite any decline in relative incomes. For example, large numbers of students in France enter courses in psychology or sociology although they know that employment possibilities are limited. They are certainly not motivated by an expectation of large incomes as graduates in these fields. Then too, it is commonly accepted that neither social status prospects nor high earnings are associated with graduates who pursue disciplines grouped under the humanities, yet despite this knowledge, in the United States and in Europe the most pronounced general trend in the distribution of students by field of study has been towards the humanities. Some Eastern European countries also provide similar evidence since salary differentials between graduates and non-graduates are very small. In Czechoslovakia we even have skilled workers earning more than medical doctors and a technician often earns more than an engineer. And yet demand for university places is increasing and severe admittance requirements exist in order to reduce this demand.

(1) Butcher, H.J. and Rudd, E. (Editors) - Contemporary Problems in Higher Education London: McGraw-Hill, 1972. (p. 370) (Chapter 27 entitled - "The Profitability of Higher Education: A Review of the Experience in Britain and the United States" by George Psacharopoulos of the London School of Economics)

A shift from predominantly investment-oriented to a more consumer-oriented perception of tertiary education can be noted in the whole student unrest movement and this trend can also be seen in official country policy statements. Whether it will one day be considered reasonable to pay an unskilled worker a higher salary than a university graduate because of the unpleasantness of the worker's task, is a matter of conjecture, but the trend may well move in that direction.

The problem of financing higher education emerges as a further possible economic constraint since the growth of expenditure on tertiary education in most countries over the last 25 years will be difficult to maintain. The percentage of public budget which this expenditure represents must, it would appear, eventually reach a ceiling especially when local and national governments have to meet other social and political priorities such as health service, transport, pollution etc. Owing to the salary component in educational expenditure, unit costs in tertiary education must continue to rise more rapidly than the GNP. Thus it becomes all too clear that a constant proportion of expenditure on tertiary education in the public budget (which will presumably grow faster than the GNP) will eventually be consumed by rising unit costs, leaving little for expansion of enrolments.

If the following table is considered than the high income elasticity of the demand for tertiary education and the fact that many countries (especially in Western Europe and in underdeveloped nations) still have low enrolment ratios, implies a very wide margin for future growth.

It is true that there must be a ceiling to this expenditure but the question is whether this is now being approached.

TABLE 2 (1)

PRESENT AND PROJECTED TOTAL EXPENDITURE ON
POST-SECONDARY EDUCATION (% of GNP)

Germany	(1)	1968	1.02	1975	1.60
Finland	(1)	1970	0.85	1974	0.93
Norway	(1)	1969	0.75	1985	1.60
United Kingdom	(2)	1970	1.20	1981	1.80
Japan	(1)	1966	1.10	1975	1.50
United States	(3)	1967	2.00	1976	3.00
Canada	(4)	1968	1.62	1975	3.25

- Sources: (1) Country Statements submitted to the Secretariat - DAS/EID 70.24.
- (2) Educational Planning Paper No. 2, HMSO.
- (3) Office of Education: Projection of Educational Statistics 1977 - 1978, Washington 1968.
- (4) Federal support of universities and colleges of Canada - Association of Universities and Colleges of Canada, 1970.

The very fact that it is difficult to envisage any economic or technical considerations (short of World War III) which might prevent the percentages given in Table 2 from increasing, in no way diminishes the importance and urgency of measures towards better productivity and an improved utilisation of resources in tertiary education. The whole issue remains quite simply a question of political priorities.

In concluding this section on economic restrictions, mention must be made of a noteworthy development in some countries. There is a tendency towards overproduction in certain fields in tertiary education. This emerging and significant trend results partly from the decline in economic growth rates. The United States in the post-1970 period is a case in point

- (1) Organisation for Economic Co-operation and Development - Towards New Structures of Post-Secondary Education
Paris: June 1971. (p.26).

since many highly qualified young men and women have been unable to find employment. Many additional factors such as the Vietnam withdrawal, the National Aeronautical and Space Administration rundown, and the abandonment of the Supersonic Transport Project have contributed to this overproduction. This has also led in the early 1970s to a slight decrease in enrolments in higher education in some parts of the United States.

This same trend is now clearly discernible in the United Kingdom and in France, and although it may well be short term it is having an effect on job opportunities for diplomates and graduates. This trend coupled with the move away from science and technology into the social sciences may in fact partly account for the increasing demand for short-cycle tertiary education.

4. THE MOVE TOWARDS MASS TERTIARY EDUCATION

A. Unity and Diversity

When considering the establishment of a mass tertiary education system two desiderata assume some importance. First comes the concept of unity. Unity implies an easy movement of students, teaching staff and financial resources from one level or field of study to another as well as between different institutions. It also implies a need for integrated planning. Secondly, the notion of diversification suggests a great variety of educational opportunities (of patterns of study, of degrees and of ways in which to obtain them). These two elements would help to create a multi-purpose and pluralistic structure without sacrificing the necessary complementarity and close organic links necessary to maintain its various components.

In the transformation process from elitist to mass tertiary education certain issues appear to be of strategic importance. Although the five issues selected could well be augmented, there is ample evidence to prove that in their efforts to reform the overall structures of post-secondary education many countries are at present concentrating on these very issues.

B. Links Between Secondary and Tertiary Education

Mass tertiary education is a concomitant of increasingly widespread secondary education and the countries with the highest enrolment ratios in tertiary education are usually those with the highest ratios at the secondary level.

In at least four countries - the United States, Canada, Japan and the Soviet Union it is possible to speak about mass secondary education, since about 75% or more of the respective age groups attend secondary schools. In those European countries which follow a transfer type of education the situation differs greatly from these countries, and in the United States and Canada there is a similar (though smaller) gap in enrolment ratios at the tertiary education level. However, at the level of tertiary education it is strange to note that Japan and the Soviet Union are only at the level of some European nations.

It would therefore seem logical in the light of this evidence, that certain European countries should concentrate their efforts on improving secondary education facilities before embarking on massive programmes of expansion in tertiary education. In some parts of Europe the large disparities in secondary school attendance when compared with the United States, for example, reflect the use being made of these schools to create a mechanism for intellectual selection for entrance into tertiary education. Any measures taken at the tertiary level in this sort of school system could have only a peripheral effect since the real process of equal opportunity cannot occur without a considerable increase of the secondary sector. However, there is often a gap between wise theory and practice, and many European countries face the great dilemma of pressures and demands at both secondary and tertiary levels and consequently they are obliged to implement policies aimed at a simultaneous improvement of both sectors.

In Europe the need is not only for an increase in the numbers of pupils at secondary level, but also for a great change in the traditional relationships between secondary and tertiary education. Both historically and functionally in

Europe, general secondary education was used to serve pre-existing universities, while in the United States, Canada and the Soviet Union, for example, the tertiary education system is an organic continuation of the already developed secondary system. (1) Japan deviates somewhat from the two standard patterns for she has secondary enrolment ratios similar to those in North America and tertiary education ratios approaching the European countries. This in turn means that Japan has a very low transfer coefficient, less than 30%, as compared with 50% in the United States and up to 90% in Europe when considering all types of secondary and all types of tertiary education. Since Japan has blended two heterogeneous models i.e. the American secondary pattern and the European university pattern, into a system in which the elitist university model has not yet given way to the upward pressure resulting from nationwide secondary education, it is obvious that her problems differ from many western nations.

More recent reforms in Europe which have created opportunities for diplomates from many types of secondary schools to enter universities, represent a movement towards mass tertiary education. Universities now have to provide not only for those for whom they carefully devised an appropriate academic schooling, but also for those who have merely attended school for \pm 12 years. The consequences of this trend, insofar as curriculum and structure are concerned, are considerable, particularly when comprehensive secondary education is aimed at, as may be seen in the proposed West German reforms. Mass tertiary education will have to adapt its teaching methods, content and institutional framework, to a much wider variety of qualifications than in the past and all types of secondary schools will have to take cognisance of the fact that a large proportion of their pupils will move into tertiary education in years to come. When one considers

(1) This explains why transfer coefficients in Europe between academic secondary schools and universities are high since this education served almost exclusively for entry into universities.

the question of recurrent education (1) it is inevitable that secondary schools will have to offer appropriate combinations of practical and academic training and that tertiary education institutions will have to receive students both with and without any job experience.

All the foregoing considerations lead to the emergence of a more comprehensive concept of post-compulsory education which extends from upper-secondary education (age \pm 16 years) to non-university and university type education (age \pm 24 years and more). Because the period of compulsory schooling is being slowly extended to 11 or 12 years, policies for planning new structures of tertiary education cannot be sensibly articulated unless they include the whole post-compulsory sector. The principles of unity and diversity which seem essential for education at tertiary level should also embrace what is still considered as upper-secondary education. In this way the discontinuities, social bias selection and the vocational/academic dichotomy, which are built into existing structures, may be avoided.

C. Provision of Alternative Institutions

It has often been proved that innovations are more likely to succeed through the creation of new institutions than through transformation of the old. Furthermore, even if the creation of these institutions is on a small scale or only on an experimental basis, the success may have a powerful "demonstration" effect on the rest of the system.

This observation applies to many aspects of tertiary education, the most important probably being the many new functions which tertiary institutions are expected to assume, namely the offering of various kinds of services to the community, participation in regional development and the provision of continuing education (adult education, retraining). No less important are innovations concerning some of the new basic concepts in tertiary education: combining education and

(1) Recurrent education implies providing for the alternation of periods of education and periods of work immediately after the termination of secondary or of compulsory education.

work, individualised education, more diversified curricula corresponding to a wider range of abilities, education for "self-fulfilment" or "individual development". Obviously all these innovations apply to the whole of tertiary education, universities and non-university institutions alike, but their implementation through the latter appears in some countries to be the easiest way to begin a process of change. There may be several reasons why this is true: they are newly created, or at least they have no secular tradition; they often incorporate greater flexibility; they are closer to local interests and needs; and they possibly reflect more accurately the nature of the new tertiary education clientele.

Since it has not been proved that either of the two alternatives (comprehensive university or the coexistence of different institutions) is inherently better than the other, it is clear that optimum solutions will depend on the respective national context and the prevailing traditions. It will also depend on the capacities and willingness of the universities to assume an internal diversification.

Existing university institutions, in a majority of developed countries, will either have to reform radically by providing the new mass higher education facilities required by new disciplines which have not yet gained academic acceptance (e.g. provision of non-traditional patterns of study, new and multiple access roads and a differentiated degree structure) or they will have to concentrate these facilities in a parallel sector whose links with the former will have to be steadily improved. A good example of this latter case is the binary system in the United Kingdom where the links between the sectors remain weak at present, but where the non-university sector consists of all levels of study from sub-degree to doctorate owing to the existence of the Council for National Academic Awards (CNAA).

In the province of Quebec in Canada and in Bielefeld (1) (some proposals and pilot projects) a new multi-purpose college has emerged which is situated between upper-secondary and higher post-secondary levels. Virtually everybody will have to pass through this college whether they wish to continue studying at a university or even if they intend entering the stream of life at about 20 years of age. A not unsimilar solution has emerged in the United States where community colleges are at present enrolling about 40% of new students into post-secondary education and more and more universities are becoming upper-division institutions by discarding their courses offered during the first two undergraduate years so that community colleges may adopt this intermediate function.

As far as the institutional components of mass tertiary education are concerned it is suggested that four basic models are emerging while the fifth model (e) indicates an existing but passing phase:

(a) Integrated Comprehensive University

This model implies the establishment of a new organisational model which combines all the previously separated forms of tertiary education: short-cycle and long-cycle, academically- and vocationally-oriented, part-time and full-time (e.g. German Gesamthochschule, Danish University Centre).

(b) Binary System

This model maintains, at least temporarily, two more or less separate sectors of tertiary education. It is almost exclusively found in the United Kingdom (and partly in Ontario in Canada) where the university or autonomous sector on the one hand, and the advanced further education sector

(1) Early in June 1972, North-Rhine-Westphalia's new Minister for University Education (holder of the first such post in West Germany) put forward a final draft of a "comprehensive university" Bill. This Bill envisages a combination of all existing forms of tertiary education, as the norm for West Germany's leading industrial state. The first five new foundations are to be established in August 1973, and existing universities, colleges, colleges of education, etc. combined into the new form of institution by 1977. Not only will the Abitur qualify a candidate for entry to one of the new comprehensive universities but also the Fachhochschulreife, a more limited qualification.

on the other, have been developing independently. The institutions included in the latter operate as follows:

(i) Except for the relations established between some teacher training establishments and universities in Institutes of Education, the separation from universities is even more marked than in continental Europe, since the two sectors operate under different administrative bodies;

(ii) Like short-cycle institutions (SCIs) of the "multi-purpose model", the United Kingdom institutions are highly diversified, not only in level and type of courses provided, but also in the development of various patterns of study, e.g. sandwich courses, part-time day and evening courses;

(iii) Some institutions in this sector (at present, mainly the polytechnics) offer degree-level and post-graduate courses, independently of the universities. Despite this fact, they represent a specialised and professionally-oriented sector as opposed to the more theoretical, academic orientation of the universities. They do not carry the same social prestige even though, in principle, their degrees awarded by the CNAA are of the same level as those awarded by universities.

Tertiary technical education in the United Kingdom seems to have influenced the development of the colleges of applied arts and technology (CAATs) in Canada. The main function of these colleges which are strongly community oriented, is to provide highly diversified terminal courses of technical education thus reducing to a minimum student transfer to universities.

(c) Combined Development

The emphasis is on the creation of a network of district colleges and a partial reform of universities while maintaining close links between the two. Mobility of students and teachers between them is facilitated and encouraged (e.g. France with its radical reform of universities and the creation of university institutes of technology (IUTs); Yugoslavia, Belgium and to some extent the United States).

(d) Short-Cycle Multi-Purpose College

The prototype of the multi-purpose model is the American Junior or Community College. Its development was a direct consequence of mass comprehensive secondary schooling such as characterised the United States, Canada and Japan (1).

The main characteristics of the multi-purpose model are:

(i) The respective SCIs are closely linked to university education, not usually from the administrative point of view but because some of their courses parallel the first two years of full university study, thus allowing transfer of students and inter-institutional mobility;

(ii) They are multi-functional institutions with highly diversified curricula ranging from various types of general and vocational training of a terminal nature to the purely academic courses which prepare for continuation of studies at a university;

(iii) Institutions of this type are geared to meet local or regional needs and are less concerned with problems of national standards. They constitute a highly decentralised system with a considerable degree of institutional autonomy.

The main SCIs which can be grouped under the multi-purpose model are the Collèges d'Enseignement Général et Professionnel (CEGEPs) of Quebec and the junior colleges of some of the western provinces of Canada. The CEGEPs have an even closer link with universities because the first cycle of university studies is to be provided exclusively in these colleges along with terminal and vocational courses. However, these institutions are less autonomous than universities, and subject to greater central control.

In their attempts to build up an SCI system, two European countries have incorporated some of the characteristics of the multi-purpose model. The recent Norwegian

(1) The junior college system in Japan, although based on the American model, underwent fundamental changes when introduced into the Japanese context. Given its actual characteristics it is perhaps nearer to the United Kingdom type.

District Colleges represent a departure from the old European tradition and the adoption of some of the main features of this model. In Yugoslavia the "Visih Skola" (two-year tertiary schools) in the early 1960s, offered transfer as well as terminal courses, and represented the first European experience of relatively autonomous institutions outside the universities providing two-year courses considered equivalent to the first two years of university study.

(e) Specialised Model

In an effort to provide tertiary education for students coming from non-academic streams of secondary schools, and who were therefore not admitted to the universities, a "specialised type" of SCI was developed. In this respect they were the continuation of a streaming process begun at secondary level.

This model has the following basic characteristics:

(i) Each institution offers a limited number of courses and specialises in one or a few areas of study or training, e.g. teacher training, social assistance, paramedical professions, and various technical fields.

(ii) Since these institutions offer mainly terminal, vocationally-oriented courses, the organisation of their studies is completely independent of the university sector and the links with universities are very loose or almost non-existent.

(iii) Owing to low institutional autonomy inter-institutional differentiation tends to be small. They are centrally administered either by national or regional authorities and although this favours the existence of a co-ordinated system (at least between institutions of the same specialisation), the pressures to conform to national standards counteract institutional initiative which would reflect local or regional needs.

Until the early 1960s almost all continental European countries (with the exception of Italy and Austria) had an SCI system which fitted rather closely the above characteristics, in particular, Belgium, Denmark, France, Germany, the

Netherlands, Portugal, Spain and Turkey. However, during the late 1960s many European countries began introducing far-reaching reforms significant examples of which are: the reform of the "enseignement technique superieur" in Belgium, the creation of university institutes of technology in France, the reorganisation of "Fachhochschulen" (formerly "Ingenieurschulen" and "Höhere Fachschulen") in Germany, the planned polytechnics in Portugal, and an overall reform of the higher education system in Spain.

Certain elements, which are essential in the establishment of mass tertiary education, are found in all five models. Firstly they offer considerably enlarged facilities for tertiary study in terms of widespread geographic location, of entrance conditions in relation to educational backgrounds and of patterns, length, forms and fields of study. Secondly they provide (except for (e)) opportunities for transfer of students from one level and type of study to another.

During the years following World War II, short-cycle and, in general, non-university educational institutions grew at about the same rate as universities (1). If in some instances (community colleges in the United States and two-year tertiary institutions in Yugoslavia) the former expanded considerably faster than the latter, the dichotomic nature of the system was in no way altered. Thus the shortcomings which these dichotomies generated were often perpetuated and even strengthened.

Many countries have also experienced, in all parts of their post-secondary education systems, what might be called an institutional upgrading trend. The status of many of the SCIs had often resulted from the upgrading of secondary schools and in some instances certain SCIs have striven for, and occasionally attained, university status. The sector is therefore a perpetually changing one with an inflow of institutions from below and an outflow above which implies,

(1) Evidence strengthening this assumption can be found in "Development of Higher Education, 1950-1967. Analytical Report". OECD, ED(70) 3.

in fact, an escape from the "less noble" tag. Moreover, when an SCI attains university status, it often no longer fulfils some of the main functions for which it was created (e.g. locally-oriented courses, part-time education). Significant examples of this process are the British Colleges of Advanced Technology, some American Junior Colleges, and in a certain sense also those European SCIs which, when unable to become full universities, often add one or two years to the duration of their course of studies so that they may be considered of university level.

One of the underlying issues in the creation of alternative institutions, and more particularly short-cycle institutions, is their search for identity. It is noteworthy that the integration of SCIs into higher education has not necessarily increased their prestige within the context of the overall system. SCIs are still trying to find their rightful place in structures which are often highly resistant to the incorporation of new members.

As they became, or are becoming, acknowledged members of the higher education sector, they are judged and judge themselves by comparison with the traditionally prestigious universities. In the past society in general and the SCIs did not have this preoccupation (or at least they had it to a much lesser extent). Despite many disadvantages their functions and their place were fairly clearly defined, whether as secondary school institutions or as part of a tertiary sector considered separate and independent of universities, and their prestige per se was more or less established. However, this situation is in the process of being changed as established universities increasingly become a frame of reference for the new or reformed SCIs. This process implies the adoption of a value scale which places highest pure research (development of knowledge for its own sake and theoretical and abstract disciplines), while vocationally, technically and practically-oriented studies are placed on the lowest echelons. A value scale of this sort is not really suited to the present needs of society and even less to the emerging systems of mass

tertiary education which, on the contrary, require a wide institutional diversification without, or with a minimum of, institutional hierarchy.

The crux of the problem seems to lie in the fact that although structures of higher education are evolving slowly they have still changed more rapidly than the value systems prevailing in them. Thus it appears that while the incorporation of SCIs into the various systems is gradually taking place, the traditional and powerful norms established by the universities make it difficult, if not impossible, for the new members to acquire sufficient parity of esteem and prestige without following these norms and thereby rejecting their own particular functions.

A real solution to the whole problem may possibly only be found within the context of recurrent education which would make any distinction between short- and long-cycle tertiary education virtually meaningless. However, a full, or even a partial implementation of such an ideal cannot be expected in the near future. In the meantime SCIs are faced with a basic dilemma: whether to pursue their objectives through a more or less independent or parallel sector or through a gradual integration with the universities.

Separate development may well reinforce even more the dichotomic nature of many systems by increasing the gap between "noble" and "less noble" institutions. On the other hand it may lead to the development of such vast and widely diversified systems providing all types, patterns and levels of study that eventually the traditional university would represent only a minority sector in the overall system and gradually lose its dominant position (cf. the United Kingdom binary system). If such a situation prevailed then "integration among equals" could be envisaged as feasible.

Integration with universities could mean that SCIs increasingly orient all their activities to correspond more closely to the traditional university image thus leading to an unwise uniformity in tertiary education. A possibility that must be reckoned with is that such integrating with the

university sector may bring about a great change in the objectives, philosophy, functions and methods of university education and lead to a new definition and concept of university institutions and of tertiary education in general.

The attitude of universities will largely determine which of these two alternatives is chosen. Will they prefer to keep their traditional (even if superficially revised) value structure? Or will they accept the SCIs as equal partners with all the consequences that such an acceptance would imply?

If the universities adopt the first of these two attitudes, a parallel development of SCIs would probably constitute in the short term a more efficient strategy. If, on the contrary, they adopt the second attitude, their integration with various types of SCIs will contribute to the growth of systems where unity could be achieved without uniformity, and diversity could exist with a minimum of institutional hierarchy.

D. The Structure of Studies

In the traditional higher educational systems in Europe up until recently a limited range of disciplines and courses in established and academically-acknowledged fields was provided. However, in the United States (and also to some extent in the Soviet Union) hundreds of types of degrees and diplomas ranging from philosophy to caretaking, represented the vast range offered by a mass tertiary educational system.

Even the elitist higher education systems have been introducing new disciplines either into the universities or by creating new institutions but the pace of innovation has always been slow. As mentioned at the beginning of this chapter it is interesting to note that degrees in sociology and economics were only introduced into French universities in the late 1950s and early 1960s! Even when new fields of study were acknowledged by universities they had for a long time to remain "parents pauvres" of the academic family.

Real efforts have been made in recent years in most European countries to provide courses in new disciplines as well as in multi- and inter-disciplinary fields of study. (1) The "Seminar on Pluridisciplinarity and Interdisciplinarity in Universities" organised in Nice in 1970 by the OECD Centre for Educational Research and Innovation, indicates that the rapidly changing structure of knowledge and the trend towards individualised education are now recognised widely and that the contradictions between the old, limited number of disciplines in traditional institutions, and scientific and technological progress could not be allowed to continue.

The only question to be resolved here is whether these new fields and disciplines can best be introduced in existing universities or in new institutions (or in both) and on what scale this differentiation should occur. A certain counter-trend to the previously accepted plurality of degrees can be found in both the United States and the Soviet Union. This may be partly due to the fact that the past trend went too far, and partly to the awareness that economic and technological conditions of modern society require as much polyvalence as specialisation. A recent report of the Carnegie Commission on Higher Education ("Less Time, More Options", January 1971) proposes that "the 1,600 current degrees be reduced to 160 at the most", and adds: "We believe that the process of reduction would decrease the now increasing emphasis on narrow certification and would lead to a better preparation for work and life." However, the report also proposes that the 160 degrees should all be offered at four different levels which would represent in fact 640 types of degrees - and this obviously remains a considerably larger range of educational possibilities than anything available now in Europe.

The whole problem of the structure of studies is a more fundamental and conceptually unresolved issue. The basic

(1) See also the interesting chapter by Arnold Kettle on "The Open University and the problem of inter-disciplinary Education" published in Higher Education Patterns of Change in the 1970s edited by John Lawlor. London: Routledge and Kegan Paul, 1972. (pp. 51-65)

question is here: What are the most appropriate sequences and relationships between general and specialised education, between practical and theoretical instruction, and also between work experience and formal education? The question of appropriate curricula and of conceptual and pedagogical linkages between practically- and theoretically-oriented courses represents probably the core of the search for compatibility between transfer and terminal courses. Ideally this problem would be solved if equivalence could be established between the first part (first cycle) of long university studies (1) and courses offered in SCIs. In practice no real solutions have been found, and many have failed.

An attempt at "gap-bridging" in the binary system of tertiary education in the United Kingdom, resulted from the creation of the Bachelor of Education (B Ed) degree. This four-year professional degree is offered at Institutes or Schools of Education (2) and is a measure designed to upgrade teacher education done outside a university by institutions which affiliate themselves to a university. This degree is an example of the somewhat unexpected recognition by "noble" institutions of work carried out in what traditionally came to be regarded as "less noble" institutions. The B Ed is an

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- (1) Although French IUTs provide mainly two-year terminal courses there are various "bridges" to long-cycle higher education to enable some students to continue their studies in other UERs at the second-cycle level. However, equivalence between the IUTs and the first two-year cycle of university study has not been established and probably never will, since the IUTs train higher technicians, and students are admitted to IUTs after an examination of their records while the common-law UER generally admits all baccalauréat holders.
- (2) This is a form of association between a university department of education and the local colleges of education. Although the White Paper published in December 1972, proposes the elimination of the Institutes of Education or Area Training Organisations and their replacement by regional committees, the B Ed will continue as a three and four year professional degree. The White Paper is referred to in the concluding section in this chapter and in Chapter Five.

example of the tenuous link which now exists between some institutions in the two sectors in the United Kingdom binary system.

The future of tertiary education could well depend on the successful resolution of this crucial issue (i.e. the structure of studies). In a sense all tertiary educational issues are related to this question because its solution will determine the movement of students to and from tertiary education and their mobility between different educational institutions and between education and work.

A system embracing a general credit point structure has been contemplated but a systematic and comprehensive analysis of the various aspects which it involves is still lacking. In this system credit points correspond to small "learning units" or "modules" transferable between fields and levels of study and between various types of institutions. Many features of such a system have already been implemented in the United States (1) but their introduction in Europe is a relatively new phenomenon and is mostly limited to single institutions or to institutions of one category. Recent proposals have attempted to widen the scope of transferability of credits, for example the French concept of "unités capitalisables" and the German "Baukastensystem". A further step in this direction is the Swedish idea of eliminating all types and levels of degrees and of replacing them by certificates indicating the number and subject content of points acquired. This would allow students to end their studies whenever they wish and whenever their number of points is sufficient for a particular job.

Numerous practical problems will have to be solved before a general credit point system could be widely applied. In particular, appropriate criteria must be drawn up for transferability of points between fields and levels of study

(1) An example is the College Entrance Examination Board's (Princeton, United States) programme of Credit by Examination generally known as CLEP (College Level Examination Programme).

and between institutions. Transferability obviously cannot be absolute. For example two years in a nursing school cannot be regarded as equivalent to the first two years of medical studies, and a set of conversion keys for different subject and level combinations will have to be created.

Many existing structures are still largely based on traditional pedagogy which postulates only unilateral relationships and movement from abstract and theoretical to practical, from general to specialised, and from education to job. The experiments with curriculum inversion (1) in Yugoslavia and small scale pilot schemes in Sweden are an attempt to try out reversed relationships (2), but the evidence thus far has not indicated that such reversals could necessarily be successfully generalised. According to the scheme in Yugoslavia, the practically- and vocationally-oriented courses were to come at the beginning of post-secondary education and the more theoretical afterwards. This would have allowed a complete equivalence between short-cycle technical (vocational) tertiary education offered by the "Visih Skola" and the first two years of regular long-cycle university education. Students in both institutions have at the end of their first two years the choice of either continuing their studies or entering the labour force with a recognised intermediate degree. The scheme was not successful, partly because neither its pedagogical nor its

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- (1) Whether the idea of "curriculum inversion" can be taken up again and more successfully implemented in different conditions remains to be seen: certainly the traditional sequence of courses in university studies often proves to be inefficient and ineffective. For example, it is claimed that students of medicine or engineering who spend their first one or two years on purely theoretical studies have almost forgotten what they learned a few years later at precisely the time when they could evaluate better the relevance of basic sciences for their field.
 - (2) In Florida some universities and community colleges have co-operated to invert the traditional pattern of generalised to specialised training by allowing students to carry out two years of specialised training at a community college and then transfer to a senior college or university for a further two years of generalised education.

conceptual implications were really solved and partly because it resulted in too high a transfer rate of students from the non-university vocationally-oriented sector to the universities. As a result Yugoslavia is today possibly one of the few countries where the trend is towards increasing separation between short-cycle institutions and universities and where student mobility between the two sectors is being reduced to a minimum.

Even if "curriculum inversion" should for the meantime be considered impractical, most approaches to the problem of curriculum revision in SCIs and to links with the curriculum in long-cycle higher education represent a search for types of courses common to various fields of study and to institutions providing education of different levels and orientations. Good progress has been made towards finding common courses in related fields of study (e.g. pharmacy, medicine, various fields of engineering) but usually these courses are of the same educational level or institutional type. Much less has been done towards finding a "tronc commun" for medical and paramedical studies, for long-cycle social science and short-cycle courses for social assistants, and for engineering and short-cycle technical studies. Related to the issue of common inter-level and inter-institutional courses is undoubtedly the problem of inter-disciplinarity which is a question which must be considered with reference to the links between SCIs and universities.

Until research and experience prove otherwise it seems safe to assume that the traditional structures of studies (general to specialised; theoretical to practical etc.) are not always noxious or inefficient in themselves. However, what is highly unsatisfactory is their exclusivity or general preponderance. It would also be assumed that it would be unwise to expect all students to be subjected to a reversed structure (special to general; practical to theoretical etc.) (1)

(1) The partial failure of Soviet attempts to polytechnise their secondary schools and the post-1964 changes in this approach provide evidence that a "reversed structure" does not necessarily suit all students.

A system offering alternative structures of studies i.e. some students following the traditional path and many using the opposite pattern, seems to be a logical answer at this juncture. In the light of the concern being shown about developing paths towards recurrent education such a system would be advantageous and would interestingly enough correspond to one of the main recommendations of the Carnegie Commission (1):

"We believe not only that all colleges should encourage prospective and continuing students to obtain service and work experience, but also that some colleges may wish to require it before admission or at some point during matriculation and could, in fact, in appropriate instances, grant credit for it toward completion of degree requirements."

The pedagogical and organisational problems raised by this Carnegie Commission suggestion have not yet been sufficiently examined but it would appear feasible that a system of alternative structures of studies could be incorporated into any of the five institutional models described earlier.

E. Society and Tertiary Education

Because knowledge now occupies a central place in the total development of society, closer links must be formed between tertiary education and society by means of direct participation in the economic, social and cultural development of the surrounding community. A whole range of tasks results from the emerging rôle of the tertiary educational sector namely, adult and continuing education (economically and culturally oriented), extension services, and participation in national, regional and local planning processes.

Universities have, in some instances, carried out these tasks (2) in the past, but to a large extent, especially outside the United States and the United Kingdom, such

(1) Carnegie Commission on Higher Education - Less Time, More Options McGraw-Hill, 1971.

(2) Adult education courses in many English universities and agricultural extension schemes of American Land Grant Colleges are two good examples.

activities have really been marginal to the life of the universities, whereas in a mass system they would have to become totally integrated and become as significant as the teaching and research process itself.

The articulation of society and tertiary education in the execution of these new societal involvements, poses two important questions:

(i) What organisational, personnel and decision-making processes in tertiary educational institutions provide the most appropriate mechanisms for coping with the new tasks?

(ii) How should the traditional and indispensable functions of tertiary education be linked to these new tasks?

The most important factor in answering these questions is the development of attitudes among the people involved in tertiary education (academic staff, administrators and students) so that their personal value structures are broadened enough to consider service to the community as an objective of their institution on equal terms with the goals of pure research and teaching. (1) Specific responsibilities for some of the new functions could of course be allocated to selected people or specially employed personnel and training for these responsibilities could gradually become a recognised part of the training of future academic staff and administrators. In this way a gradual erosion of existing "ivory tower" attitudes among academics could be encouraged, since no fundamental changes can really come about unless a new vision of the enlarged functions of mass tertiary education can be established.

A possible solution to the problem could result from creating a closer link and interpenetration between research and teaching on the one hand and involvement in national, regional and local planning, adult or continuing education, and extension services on the other. It is also likely that tasks related to the latter functions, will at least to

(1) The concept of Community Services in the community colleges of the United States is particularly applicable here. This concept has been thoroughly analysed later in this thesis.

some extent become subjects of the former. (1) It could well be that this approach embraces two concepts much lauded by students and academic staff, namely, the "quest for relevance" and "teaching by doing." These two concepts have been proposed as a possible central theme for mass tertiary education and the Carnegie Commission's report (2) sums up this proposal as follows:

"Society could gain if work and study were mixed throughout a lifetime, thus reducing the sense of sharply compartmentalised rôles of isolated students v. workers and of youth v. isolated age. The sense of isolation would be reduced if more students were also workers and if more workers could also be students; if the ages mixed on the job and in the classroom in a more normally structured type of community; if all members of the community valued both study and work and had a better chance to understand the flow of life from youth to age. Society would be more integrated across the lines that now separate students and workers, youth and age."

It is quite clear that the traditional tertiary educational systems, even when greatly expanded, did not achieve the objective of equality of opportunity. Tertiary education has not really facilitated upward social mobility and it may in fact have helped the upper or middle classes to consolidate their position. In many countries the social dimensions of educational financing have been such that the poor have been supporting institutions for the well-to-do who are the people making most use of the facilities. Perhaps greater equality of opportunity (or a sense of social justice) would be brought about by creating a new type of relationship between

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- (1) This is already occurring on a small scale in some countries e.g. in parts of the United States students participate in social work schemes (research projects) geared towards specific local needs and even occasionally whole institutions are set up in relation to problems and the socio-economic context of the surrounding community and region (as in the north of Norway at the University of Tromsø).
- (2) Carnegie Commission on Higher Education - Less Time, More Options McGraw-Hill, 1971.

tertiary education and society based on an interpenetration of work and study, and the involvement of tertiary education in a much wider range of societal functions than previously.

In positing a closer link between tertiary education and society the question must be asked: If tertiary educational institutions become involved in local and regional problems could this not result in their dependence on political and narrow economic pressures and lead to a decline in their standards? The danger arises not only with respect to the link between tertiary education and the surrounding community, but also as a consequence of the vast mass of resources which the State has to provide.

Perhaps this issue can only be resolved by achieving a balance between the legitimate concern of tertiary educational institutions for real autonomy and the justifiable public demand for more accountability. Already a number of forces are at work establishing this balance and it is evident that the upgrading of secondary to tertiary institutions or of non-university to university level institutions results almost automatically in the awarding of a larger degree of autonomy, while conversely the ever-increasing need for resources inevitably forces tertiary educational institutions into schemes which force them to respond positively to regional or central planning measures and accountability. Because of its inherent diversification, mass tertiary education will be pluralistic, which means that control by external bodies, even if it is increasing, will be vested in a larger number of loci of power, which reduces the danger of its becoming total or authoritarian.

In establishing the requisite balance in mass tertiary education between autonomy and control, the main need is to establish appropriate mechanisms by which the conflicts and tensions of this problem can be brought into an equilibrium, albeit a temporary and ever-changing one.

Although administratively short-cycle institutions are gradually being granted higher education status and even considered of "university level" in some countries, they are

not accorded at the same time the degree and type of autonomy which is usually associated with traditional higher educational institutions. The SCIs and the non-university sector in general are subjected to tighter governmental control than universities.

The demands for increased autonomy come mainly from the SCIs concerned. They aver that in order to fulfil some of their basic functions they must have more independence in academic, financial and administrative matters. The SCIs also claim that an appropriate adaptation to technical and scientific developments, rapid response to local or regional needs and sufficient flexibility to introduce innovations and to contribute to the diversification of the system as a whole, cannot be achieved in a situation characterised by the slow and complicated decision-making procedures which typify centralised control.

However, governmental representatives view the problem differently. According to them, if SCIs were given greater independence they would be tempted to follow the upgrading trend and concentrate essentially on obtaining university status. In this way SCIs would neglect their main rôle within the system and, consequently, their responsibilities towards society.

The way in which the issue of autonomy versus governmental control is solved will depend considerably on the national context. If control is vested in local or regional authorities it might on the one hand facilitate the desired integration of all tertiary institutions at this level, but on the other hand make national co-ordination more difficult. The opposite can happen if control is exercised by central authorities. The problem also varies according to the degree of autonomy existing in universities. When it is very high, the demand for greater autonomy in the SCIs will at least in part reflect their search for more "respectability" (cf. United Kingdom Polytechnics). When it is low, the SCIs will probably accept more easily the already existing limits to their autonomy.

A certain overall trend can be discerned: SCIs and particularly the new or reformed institutions, are generally being granted a greater degree of autonomy than was accorded the old institutions of the non-university type. At the same time, universities tend to be subjected to more central control (especially financial) than in the past. (1)

F. Education and Work Opportunities

As a rule, in an elitist system, each level and type of education corresponds fairly closely to specific types of job and profession. However, in mass tertiary education the relationships between employment and education will be more diffuse than was formerly the case. In mass tertiary education the possession of a certain degree will imply movement into a substantially greater variety of occupations. This situation has already emerged in the most sophisticated systems and especially in the United States "college educated" people will be found in a wide variety of occupations ranging from managerial posts to secretary-typists and skilled workers. This has been caused partly by the vast numbers of degreed people but it also represents a change in the perception of the goals of tertiary education, whose extra-employment objectives become more important than before. In such a situation there need be little fear of overproducing graduates since the United States with a GNP per capita which is about twice that of the more advanced European countries each year absorbs four to five times as many graduates, and Japan, with a GNP per capita which is about half that of the advanced European countries, provides employment to almost three times as many graduates. (2)

To a great extent the prestige and status of short-cycle institutions will depend on the conditions under which their graduates enter the labour market and on their prospects of

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- (1) This does not apply in countries such as France where universities have always been under rigid central control and where, despite the 1968 Faure reform measures, the situation has not really altered much.
- (2) Development of Higher Education, 1950-1967, Conclusions and Policy Implications, OECD, ED(70)7. (p. 10)

a satisfying professional career. It is clear that the educational system, and more particularly the SCIs, will have to prepare high quality graduates able to fulfil the demands made on them by the economy. But it is equally true that conditions will have to be provided which facilitate the integration of SCI graduates into the labour force in a way which improves their salary conditions and status particularly in relation to university graduates. This condition is often not fulfilled. For example, job classification and corresponding salary scales in the administration and civil service of many countries do not provide any specific places for graduates of short-cycle institutions or for students with uncompleted long-cycle studies.

In the past, SCI graduates have been able to obtain similar working conditions to university graduates immediately after graduation when first entering employment. However, their possibilities of promotion in the course of time are much more limited. The question arises whether these limitations to professional advancement can be attributed to the specific type of training received or to certain attitudes prevailing among employers, and in the labour market in general, which act as constraints to the upward mobility of this type of graduate. Promotion policies based on work performance rather than on the type of degree or diploma obtained could help to reduce these disparities. Not less important is the encouragement of better possibilities for further education (continuing education, retraining, and university education). This, in fact, probably represents the key measure towards improving the professional status of SCI graduates, and consequently an essential contribution to the "ennoblement" of SCIs in general.

In Europe a balanced relationship between those in tertiary education and those in the employment sector has not been achieved. On the employers' side the resistance to employing "overqualified" personnel may be more widespread than the refusal to give jobs to those without the normally required degree. From the students' point of view a system

is considered inadequate if it cannot guarantee them specific types and levels of jobs corresponding to their particular field and level of study. Thus it comes about that employers and students and often also planners and policy-makers, approach mass tertiary education with a value structure acquired from elitist higher education. The development of a diffuse relationship between education and employment will bring about protracted alienation and frustration of individuals unless this situation can be remedied.

All that has been said about the nature of the new link between education and employment is considerably undermined when the problem of certification is considered. In almost all systems one of the main functions of tertiary institutions is certification and for many professional organisations, tertiary education serves as the first and most important screening device for entry into the professions. Add to this the fact that the majority of students enter tertiary education solely in order to obtain this certification and the problem of the relationship between education and certification becomes apparent.

In modern societies, certification is necessary in order to guarantee standards and to protect the consumer, but certain questions must be asked as a mass tertiary education system starts to emerge in many countries:

Should educational requirements for entry into the professions be as stringent as they are at present? Should we not strive towards greater occupational mobility by encouraging - or at least facilitating - lateral movements of students, rather than forcing them to "re-do" years of pre- and professional education that have often very little to do with the practice of the profession proper? Indeed, should educational institutions be divorced from the whole certification process? (1)

(1) Evidence of this can be found in a document entitled Post-Secondary Education in Ontario : A Statement of Issues 1970.

The concept of recurrent education which implies a system facilitating the alternation of periods of education and periods of work throughout the lifetime of the individual, brings an important new dimension to the employment and certification issues in tertiary education. Such a system could help to solve some of the problems which have arisen e.g. the quest for compatibility between general (academic) and specialised (professional or vocational) education, a more rational articulation between secondary and tertiary education and new patterns of relationship between education and the labour market. Recurrent education is, however, a very long-term objective and is a concept requiring radical and far-reaching changes both in the whole of tertiary education and in other sectors of society. For these reasons reforms in tertiary education cannot be delayed until this objective is achieved. The essential need is to identify and apply measures which represent a potential step towards recurrent education and to avoid reforms which block the way towards such a development.

G. Summary

The five issues which have been analysed above all provide evidence for the following conclusions:

- (i) The profound structural reforms which are called for by the transition from elitist to mass tertiary education must reach well beyond mere organisational changes since they will involve a number of basic transformations in society's concept of higher education, in its relationships to the individual and to the global social system and, thus, in its content and functions.
- (ii) Underlying these issues is the fundamental question of how to reconcile the unavoidable development towards mass tertiary education with the requirements for advancing knowledge, strengthening vital research, and of maintaining the highest possible scientific, intellectual and cultural standards which has been the traditional rôle of the universities.
- (iii) There is no evidence that mass tertiary education necessarily leads to a lowering of academic standards or that

post-graduate education must, to some extent, be sacrificed in a mass system. In fact, evidence points in the opposite direction - during the expansion periods of the 1950s and 1960s, post-graduate enrolments grew almost everywhere even more rapidly than overall enrolments. The main problem, therefore, is not so much one of incompatibility between mass education and the advancement of knowledge, but of bringing about the organisational and other changes required by the enlarged system and the new problems which it has to face in responding to its multiple functions. It is self-evident that the growing competition for resources will call for choices between the financing of growth and the maintenance of an adequate volume of research in the universities.

5. ISSUES AND DILEMMAS IN SHORT-CYCLE TERTIARY EDUCATION

A. Liaison with Secondary Schools

Almost everywhere in Europe and in the United Kingdom the function of secondary schools as a selection mechanism for streaming students into different types of tertiary education, is of primary importance. In Japan, Canada and the United States this streaming usually only takes place once students have been admitted to tertiary education. Recent trends in Europe suggest a move in the same direction mainly because of the radical reforms which are planned, or have already been implemented, in the secondary schools. One of the motivating forces behind the European reforms is comprehensiveness and the creation of access to all forms of tertiary education for pupils leaving all types of secondary schools.

Fundamentally this implies the elimination of the hierarchy among the different types of secondary schools and a diversification based solely on the various fields of study offered. The introduction of common core subjects for various disciplines, more courses of general studies in technical disciplines, and more vocationally- and practically-oriented courses in academic streams, are some of the

strategies employed to diminish the traditional hierarchical differences.

With the current trends in secondary schools gradually becoming universal it would appear that if graduates from all types of secondary school will one day possibly have access to long-cycle university studies (with the greater prestige, better positions and higher salaries which accompany this sort of education), the SCIs might risk losing part of their potential clientele, while the pressure on universities could be further increased.

A number of basic questions arise at this juncture e.g.:

(i) Should SCIs cater for students whose interests and abilities do not correspond to the requirements of theoretical, academic education or should they compete for the same students as universities?

(ii) How would the status and prestige of SCIs be affected if large numbers of students who had dropped out of universities seek admission to these institutions?

(iii) What will be the significance of educational background in the admission process for these institutions? Will there be educational opportunity for those without a formal secondary school diploma but with sufficient professional qualifications ("second route" to tertiary education)? For what type of student will SCIs constitute a first choice of studies?

The answer to these questions will to some extent be found in better articulation between upper-secondary studies and the first years of tertiary education. A developed, efficient system of information and guidance could greatly aid the achievement of this end and help improve the image of the SCIs.

Admission to different parts of post-secondary education should possibly be determined by more objective criteria than educational background and social origin. But what are these criteria and how can orientation become an integral and

institutionalised part of the admission process without violating the principle of freedom of choice of studies? Could a common obligatory "orientation year" bring about more rational decision-making on the part of students and an improvement in admission policies of the various tertiary institutions?

B. Selection versus Open Access

In systems of education where universities are characterised by selective admission it is the SCIs which constitute the open part of the system. In countries like Canada and the United States where mass secondary education takes place, there is an increasing demand for access to tertiary education by young people coming from the less privileged groups of society. Owing to their open access policy the SCIs are feeling the heaviest impact from this increasing demand.

However, it must be noted that the coexistence of free and open access to SCIs and selection at universities could lead to a type of pseudo-democratisation of the system by entrenching status differences among institutions. If, for example, the American Community Colleges are assigned the rôle of serving mainly the lower socio-economic strata and the lower-ability youth it could conceivably happen that they might also serve to isolate these groups from other selective sections of the state education systems. The result of this isolation is that good quality four-year institutions accept predominantly young people from middle- and upper-class strata and from upper-ability groups. Despite the provision of a compensatory mechanism for this discrimination (community college students may transfer at the end of their associate degree, or before, to four-year colleges and universities) statistics do in fact indicate that only a relatively small proportion actually benefit from this provision. It would appear, in fact, that the American Community and Junior Colleges serve primarily as a selection stage for full higher education and that in this process they have heavy attrition rates of which the underprivileged classes may be precisely the main victims.

Thus it would appear that in the various American education systems, the degree of equality of opportunity is relatively high upon admission into the system and during the first year of study but much lower at the level of graduation. This indicates that equality of opportunity in access does not necessarily lead to equality of achievement.

Within the context of the American Community Colleges all these facts imply that the principle of open admissions may create as many problems as it solves, unless new articulation patterns between these institutions and universities and senior colleges, are introduced. Throughout the United States solutions to the dilemma are being sought and recent figures reveal that the social composition of the student body in community colleges is changing and middle- and even upper-classes are now more represented than in the past.

The non-university sector in the United Kingdom is also open (when compared to British universities) but to a lesser degree than in the United States, and it does provide less favoured groups with access to higher education. It also offers the possibility of study to degree and post-graduate level outside the university. However, the non-university sector is composed of a variety of institutions with different levels and patterns of study and different entrance requirements - it is therefore a stratified system in itself. Admission credentials for degree-level courses in polytechnics are lower than for universities but much higher than for diploma and certificate courses and the limitations of student mobility between various courses aggravates the inequality of educational opportunity. Having entered the non-university sector students may, in only very exceptional circumstances, transfer to universities and it is all too obvious that the real selection process takes place at secondary school level.

Continental European SCIs differ greatly from the American Community Colleges and the British non-university sector since these institutions are mainly influenced by

manpower and economic considerations, and tend to respond less to social demand and the equality-of-opportunity objective than their American equivalent. However, there are two main reasons why SCIs in Europe do not take full cognisance of the need for open access and why they are less sensitive to the pressure of numbers:

(i) There is a strong tradition of open universities in a majority of countries. It is in fact the universities which represent the open access sector and, as a result, are experiencing the significant quantitative expansion of recent years. In some European countries selective SCIs coexist with open universities and in a few cases, in France, for example, students are admitted to universities after having been refused admission to short-cycle technical institutes.

(ii) The pressure of numbers in Europe results mainly from the expansion of the general academic streams of secondary schools which prepare pupils for university study. Thus a much greater demand for long-cycle institutions than for SCIs, has arisen.

The SCIs have played an important rôle in providing educational opportunity to less-privileged groups since they have provided access to tertiary institutions for students coming from the non-academic stream, and for whom therefore the universities were not open.

C. Terminal versus Transfer Programmes

The most important and difficult problem which both old and new SCIs are facing could be formulated as follows: the SCIs must offer real equality of opportunity and respond to the increasing pressure of social demand for higher education i.e. provide the possibility of transfer to university for students capable and wishing to continue their studies; they must also continue to play their main rôle as agents of diversification and innovation by providing vocationally- and practically-oriented studies. The first requirement tends to force SCIs towards a certain parallelism with universities (and dependence upon them), and hence to a neglect of some of their original functions; the second

might weaken their "respectability" and distort their rôle as "equalisers of educational opportunity". Thus the search for compatibility between transfer and terminal courses continues and the following basic practical issues emerge:

- (i) What is the optimum or maximum volume of SCI-university transfer which should be aimed at?
- (ii) What conditions should be fulfilled by students wishing to transfer (in terms of additional examinations and duration of study)?
- (iii) What are the measures by which the rate of transfer could be regulated without unduly limiting the freedom of choice of studies?

Examples drawn from the American Community College can best illustrate the problems involved when transfer work is too heavily emphasised. Most people will admit that these colleges have contributed towards the development of a flexible system and provided opportunity of access to four-year institutions to students who otherwise would have been unable to benefit from long-cycle education. However, because of the emphasis placed on this "transfer" function (often not voluntarily but under pressure of demand for these courses) they have neglected other important objectives and sometimes become academically subordinated to nearby universities whose recognition they needed for their courses. Occasionally they have even become poor copies of these universities when they attempted to be upgraded to four-year college status. The Junior Colleges of Alberta and the CEGEPs of Quebec and most other multi-purpose colleges are also confronted with this problem. The CAATs of Ontario and the District Colleges of Norway which intend to introduce transfer courses in the future are very conscious of the need to find an equilibrium.

By heavily stressing their economic objectives, the specialised SCIs in continental Europe have, conversely, emphasised the terminal nature of the education provided and thus become "blind alleys" for their graduates. Recent

reforms have attempted to solve this problem by introducing so-called "passerelles", "cursos puente", "permeability" or similar measures aimed at permitting or facilitating transfer "subject to certain conditions". Transfer is envisaged as a two-way process not only allowing SCI graduates to enrol in long-cycle studies but also permitting university drop-outs to enrol in SCIs. In this way discouraged or unsuccessful students could be recuperated by the system and given the opportunity of finishing short-cycle studies.

D. The Status of Academic Staff in Short-Cycle Institutions

Although for some time many members of the teaching staff have been assuming responsibilities equivalent to higher education, this has often not been recognised in their formal status. The present conflicts affecting the teachers of these institutions clearly reflects the marginal status of SCIs. In most countries they are regarded as equivalent, or slightly superior, to secondary school teachers, both salary- and status-wise, and they are denied the title of professor which is usually reserved for the academic staff of universities. Generally the SCI teachers have teaching loads, a degree of academic freedom and research possibilities which resemble secondary school patterns rather than higher education.

Supporters of low academic prestige for SCIs argue that teachers are not sufficiently qualified to be ranked and paid on a par with university professors. On the other hand it is argued that the only way of raising the prestige and educational standards of the SCIs is by providing attractive working conditions and adequate status to highly qualified staff.

Where new SCIs have been created this problem has been partially solved. Thus, in the Norwegian District Colleges and in the French IUTs, the academic staff have the same status as those in universities although at slightly lower echelons of the scale. (1) Countries such as Belgium and

(1) A full professor in a District College has the status of an assistant professor in a university.

Germany are following the same trend and even in the United Kingdom the teaching staff of polytechnics are acquiring the status of university professors (or at least the situation is being debated and reviewed at present).

If SCI and university teachers will in future be expected to be equally well qualified, what incentives will there be to attract good teachers to the so-called "less noble" institutions? The prospect of working in a new SCI where possibilities for innovation exist may provide some incentive but in cases where only reforms of existing institutions take place, alternative solutions will have to be found. Even when a particular SCI professes to be a predominantly teaching institution (such is the case in most American Community Colleges) an important step might be to provide research facilities, and the time for research. This can possibly be applied most successfully when the SCI and a neighbouring university are administratively or organisationally linked, as is intended in the French IUTs, Belgian technical education, the German Gesamthochschulen and Danish University Centres. Yet another solution might be the creation of an SCI with a wide range of fields of study (such as the United Kingdom Polytechnics) thus creating a multi-disciplinary teaching staff and the development of a more stimulating academic atmosphere than previously existed in the former isolated specialised institutions.

In examining the status and qualifications of SCI teaching staff certain questions must be asked:

(i) Is it not likely that SCIs will have to recruit a large number of those academics who have not been able to succeed (or at least not yet) in being appointed to a university?

(ii) To what extent is it desirable to have highly trained academically-minded professors teaching and controlling SCIs?

(iii) Will the minds of academics in an SCI not be directed to the prestigious universities and will they not be tempted to try to develop bad replicas of universities and thus

distort some of the main functions of SCIs? (1)

(iv) Will the teacher whose sights are set on the university not "contaminate" the aspirations and attitudes of the other SCI teachers?

E. Regional Development and Location of SCIs

(a) Regional Development

As with all tertiary education establishments SCIs must play their part as agents of regional development. They achieve this by the sheer economic mass they represent (especially if they are large) in the form of buying power of their teachers and administrators; the shops, restaurants, and transport which this concentration generates; the often significant changes in the urban landscape; employment opportunities created by requirements for new buildings and a strong attraction to new industries for whom the proximity of sources of qualified manpower and knowledge may be more important than proximity to sources of raw materials or to consumers. SCIs also contribute directly to the cultural, economic and social needs of the area in which they are situated.

The whole concept of comprehensive regional planning must necessarily embrace the creation and development of higher educational establishments in general and SCIs in particular (since they are often more closely connected with the surrounding community).

The central issue as far as the direct contribution of SCIs to regional development is concerned is the extent and type of co-operation which should be established between the SCIs and the various sectors of the economy which are found

(1) In a recent publication of the Carnegie Commission on Higher Education (Institutions in Transition, Berkeley, California, 1970), H.L. Hodgkinson reveals that up to 60% of American Community College teaching staff would prefer to teach in four-year institutions rather than in community colleges. How can these teachers convince students that the community colleges are not inferior institutions when they themselves do not hold that conviction? These investigations are significant since these institutions claim that they are solely teaching colleges and they have long been integrated into the tertiary education sector in the United States.

in the region. The SCIs also have to learn how to respond to the national standards of education set for them and to the immediate manpower needs of regions with very different levels of development. Yet another problem which arises is the achieving of a balance in the conditions under which closer collaboration, and service to, the surrounding enterprises can be established without risking a situation of control or of a dependent relationship. Inevitably SCIs have to decide to what extent the curricula and courses of study should be adapted to specific regional needs in an increasingly mobile society.

(b) Siting of SCIs

The location of SCIs in areas which have been lacking in tertiary education facilities is often considered to be both a means of equalising educational opportunity and as a contribution to regional development. This also applies to universities where there is a strong trend towards the decentralisation of oversized institutions which are situated in the most densely populated parts of the country (e.g. the creation of new campuses of the big American universities, the affiliated universities in Sweden and the "collegios universitarios" in Spain).

Since many of the original SCIs were often located near to secondary schools (sometimes under the same roof) a wide range of specialised and small institutions emerged. This dispersion was furthered by the establishment of various types of SCIs where unit costs were low and which were not the result of systematic planning but rather a response to political pressures.

The widely-scattered, locally-oriented SCIs have gradually given way to larger regional units. The upgrading of these institutions to higher education ranks has generated strong pressures towards a regional concentration of their activities. The main reason for this trend has possibly been the need to find a "critical mass" without which SCIs cannot perform their functions nor improve their attractiveness and prestige.

The siting problems of new SCIs are of a special nature since higher education institutions do require a greater concentration of resources (in terms of teaching staff, equipment, buildings, etc.) than a small community can usually provide or afford. Thus, one of the obvious moves in location decisions is usually the integration, or co-operation, of several local institutions which are considered constituent units of bigger regional establishments, or the upgrading of certain institutions which are considered to be strategically situated. Another important point in the siting of new or reformed SCIs is the need for closer regional collaboration with universities in the large urban centres.

This process of clustering or concentration of SCIs has not been altogether unopposed for the following reasons: those institutions which are seeking an upgraded status do not easily accept a loss of autonomy; social and political pressures are often exerted by communities where the institutions to be integrated are situated; distances between the constituent units might represent a genuine obstacle to real integration.

Almost all SCI systems are subject to these conflicting forces. The CEGEPs of Quebec, the Ontario CAATs, the Norwegian District Colleges, the German "Fachhochschulen" and the United Kingdom Polytechnics, provide examples of problems involved in the integration of existing local institutions into large regional establishments.

Decentralisation of universities on the one hand and the grouping or concentration of SCIs on the other - these two trends seem to be fairly clearly emerging. However, these trends may carry with them the danger that the location of SCIs could be chosen on the basis of similar criteria to those for university institutions. Should this occur, the SCIs would no longer be able to bring education closer to the many potential students for whom geographic distance may represent a basic reason for not continuing with further studies (in other words the SCIs would not be fulfilling one of their important functions) and such students would in any case be

more likely to register with a prestigious university which is no further away than an SCI.

The shift from local to regional SCIs could create a gap in the institutional map of tertiary education, a gap which could be filled by the creation of a locally-based institution, such as many of the American Community Colleges which do not undergo the regional concentration process. In any consideration of mass tertiary education this possibility seems especially important for underprivileged areas (economically declining regions or "poverty pockets").

6. A SUMMARY OF THE GENERAL MOVEMENT TOWARDS SHORT-CYCLE TERTIARY EDUCATION

One clear characteristic of the 1960s and the early 1970s is the fact that almost every major country has a sense of crisis in tertiary education. Even if this was not so the increasing school population combines with a new type of educational demand and public commitment to bring about changes in the shape, size and character of tertiary educational institutions. It is likely that no temporary expedient can solve the problems, thus crisis is likely to be permanent in a period of headlong change, and continuous analysis of context and experience is necessary.

When considering the main institutional components of tertiary education systems of the western world and the type of interrelations between these components, three major elements are discernible: the American, the English and the continental European.

A wide range of institutional types, from community colleges to prestigious private universities and four-year colleges and more recently the non-campus university concept, are characteristic of the American model. Although administrative and legal connections between these institutions are often very loose or even non-existent there is nonetheless an increasing degree of articulation and common recognition of qualifications. Students may move (at least on paper) relatively easily from one institution to another. The community colleges are regarded as the first step of the

institutional ladder and they provide both vocational and academic (transfer) courses as do many private and public colleges and universities. With the exception of specialised professional schools, most of the American institutions are multi-purpose offering a wide variety of vocational and/or academic courses.

At present the English model is typified by fairly rigid separation between the university and non-university institutions. The binary system comprises two independent systems where similar periods of study lead - at least in theory if not in social prestige value - to equivalent degree awards. There is very little student movement between institutions or between the two sectors and the university sector is more theoretical and general and the non-university sector more practical and specialised.

There are also two main sectors in the continental European model: post-secondary institutions with lower prestige value and short-cycle courses (often lasting two years), and the universities or university-status institutions with longer courses and selected entry to holders of the academic secondary school leaving certificate. Student mobility between these sectors is negligible and the courses are differently oriented: practical and vocational in the short-cycle institutions and theoretical and abstract in the long-cycle university courses.

One significant variation on the European model is the French system. Three categories are easily identified: the Grandes Ecoles which are a small group of elitist institutions (with some links with universities) exercising selectivity beyond the baccalaureate and offering high-level professional training or a multi-purpose advanced academic education; the universities (which have recently undergone institutional reform) are open to baccalaureate holders and also provide professional or multi-purpose academic training; and the recently created University Institutes of Technology which have few or no links with the other types of institutions and provide short-cycle specialised, vocationally-oriented courses.

This brief résumé obviously represents an oversimplification since overlapping has occurred and mixed models have developed in recent years. At the root of the present reform movements is an attempt to reconcile the "noble" and "less noble" elements of various systems and devise sensible articulation processes and create flexibility of access which will not result in a devaluation or adulteration of degree and diploma standards.

In countries like Italy and Austria the non-university sector is very small or non-existent and they are examples of a fourth model in which universities and technical universities are virtually the only component. In examining countries with one sector only Cerych and Furth conclude:

"This situation, however, is not the result of a deliberate policy aimed at unifying the system, but is simply a consequence of the fact that none of the teacher training institutions or those of technical secondary education have developed into post-secondary establishments which was precisely the origin of most of the institutions in the non-university sector in other countries." (1) Manpower requirements and the pressure of numbers entering tertiary education will almost inevitably result in the creation of non-university sectors and a movement towards short-cycle tertiary education.

When a conservative education community such as that in England and Wales accepts the concept of a short-cycle tertiary diploma known as the Diploma of Higher Education (Dip HE) then it would seem reasonable to assume that the movement towards this pattern of thought is now really established. (2)

(1) Cerych, L. and Furth, D. - "The Search for a Global System: Unity and Diversity of Post-Secondary Education" The World Year Book of Education 1971/72 London: Evans Brothers Ltd., 1971. (p. 110)

(2) A detailed analysis of this concept is provided in Chapter Five of this thesis.

The first attempt at framing the possible outline of a Dip HE in England was made by a Committee of Inquiry appointed by the Secretary of State for Education and Science under the chairmanship of Lord James of Rusholme. This Committee presented its report entitled Teacher Education and Training in December, 1971.

After a year of keen debate over the so-called James Report, Mrs. Thatcher, Secretary of State for Education and Science in England published a White Paper in December 1972, entitled Education: A Framework for Expansion. (1) Her policy decisions included a statement supporting the concept of a Dip HE which means that it is likely that during the period 1973-74 many institutions will attempt to implement a slightly modified version of the James Report proposals.

These significant developments in the early 1970s in England and Wales while clearly representing a move towards the creation of a short-cycle tertiary diploma do however differ in one respect from the community college movement in the United States. The difference lies in the selection of students. Whereas in most community colleges (and in the private junior colleges) any student who has completed secondary schooling is accepted, in the framework conceived by the James Committee, and later ratified by Mrs. Thatcher, the minimum requirement for students to be enrolled for a Dip HE will be two A levels in the General Certificate of Education (GCE). This represents a considerably higher academic attainment than the acquisition of a high school diploma in the United States (even if one demands a C grade average for enrolment in the Associate in Arts courses as do many community colleges). However, despite this degree of selectivity the Dip HE proposals have made feasible a flexible two-year post-secondary qualification which allies itself closely with similar diplomas and degrees in short-cycle institutions in many countries.

(1) A full statement of the Dip HE proposals contained in the White Paper are provided in Chapter Five of this thesis.

The possibility in England and Wales of greater student mobility between the public and autonomous sectors of the binary system, has greatly increased with the advent of the Dip HE concept. One writer (1) recently even went as far as suggesting that the binary system may well be disintegrating as a result of the revolution in content and curriculum at tertiary level and more particularly because of the introduction of a two-year qualification in a system dominated by three-year degrees.

The dangers of excessive movement from one institution or sector to another are also considerable. Such mobility can cause the short-cycle institutions to lose one of their main social functions, namely, to provide the economy with a sufficient number of workers with intermediate qualifications at semi-professional level (as for example in France at the IUTs and in the United States at the community colleges).

(1) Corbett, A. - "Binary system could be dead by 1981"
London: The Times Educational Supplement, 26/1/73. (p. 7)

C H A P T E R T H R E EACCESS TO TERTIARY EDUCATION IN THE UNITED STATES OF AMERICA1. A SOCIAL PROCESS

Social class, which many people in the United States like to ignore, or take note of only shamefacedly, plays a powerful rôle in access to education. It is a paradox that in the American society, relatively less stratified than that of Europe, the phenomenon of social class has been given more objective scientific study than in the latter. In older societies, caste and class concepts have often come to be taken so for granted as to seem a part of the order of nature. Ideas about education in the western heritage are rooted in a class structure dating from the feudal era and only partly modified by the mercantile age, the Industrial Revolution, and the growth of urban communities. Traditional views of tertiary education, in their European versions, as well as in countries influenced by European colonisation, assume a social structure and a set of social values and expectations which are inappropriate to more fluid societies, including those of developing countries.

The present generation has moved rather awkwardly into a recognition of the scope and significance of the "access-to-education" concept. Universities and colleges in America entered the twentieth century inheriting a quite restricted concept of the forces that did or should regulate admission to tertiary education. It was only when the land-grant colleges and the state college and university systems started to develop that the modern version of American tertiary education began to manifest itself.

In the 1890s the older eastern universities and independent colleges of liberal arts moved very deliberately towards the initiation of a process of standardising the subjects of secondary education which they regarded as essential prerequisites for admission. This process was a dual one: on the one hand it was a relatively small adaptation of the conventionally accepted secondary school subjects - for

example, agreement on what works of selected classical authors should be read. On the other hand it included the persistent liberalising tendency that brought science, English, modern languages and mathematics to the fore. Much of this tendency can be ascribed to the rise of the academies from 1800 onwards, and later to Eliot's broadening of electives at Harvard.

Despite the impact of these trends, the underlying social issues were left largely untouched. The "pool of ability" concept was accepted as a part of the natural order of things. This concept was based on the assumption that tertiary education was the prerogative of a small fraction of the annual crop of youngsters - a fraction drawn mainly from the affluent industrial, mercantile and professional class. It exercised little influence on the general populace, most of whom were assumed to be incapable of higher learning. This limitation was further enforced by the nineteenth century heritage of a classical curriculum of limited relevance to contemporary life. The refreshing Renaissance stream of classical learning that had burst upon Europe had been reduced in the nineteenth century to an attenuated and formalised remnant, a pedantic and pinched type of classical culture. The main impact of the sciences was yet to come. In the society that emerged after the Civil War, the main demand was for vigorous, practical men of action. Even the developing schools of engineering got along with a minimum of science, as befitted an economy whose rate of change and innovation was gradual despite its vigorous expansion.

The secondary schools served much the same limited clientele as the universities and colleges but the rise of the academies had brought about a needed influx of relevance to life and more practical subject matter and the initial development of public high schools towards the end of the nineteenth century envisioned them as "people's colleges". However, despite these liberalising influences, it remained true well into the twentieth century that for the most part only those desiring to enter a college completed secondary

schooling, and the curriculum was mainly "college preparatory" in a traditional sense. Ambitious and lively young men and women, ready to play their part in the life of their time, simply did not include a college career in their normal expectations. College attendance was for lawyers, ministers, and a few scholars, who were atypical and either underwritten or able to afford the luxury of a college training.

The land-grant colleges and the state universities were the characteristic and uniquely American contribution to the stream of tertiary education in the western world. From the outset these institutions represented a philosophy, educational and social, at wide variance with the colonial college tradition. Their policy was much more nearly an "open-door" approach, tempered by common sense provisions to exclude those clearly unready or unsuited for tertiary education. That universities of the highest intellectual standards and of great distinction have sprung from this tradition is in itself enough to give pause to those who would push selectivity in admissions to great extremes.

Of the two and three quarter million young people who complete high school each year in the United States, more than half distribute themselves among some three thousand colleges, universities, community junior colleges, and technical institutes. This "sorting out" is a social process of great complexity, not fully understood by the students involved, by their parents and guardians, or by the educators who participate in it. This process is the product of beliefs, opinions, whims, ancient loyalties, and areas of ignorance scarcely amenable to rational estimate and is influenced also by calculations and estimates projected a generation into the future. Most of the decisions involved occur outside college or university administrative offices, not in them, for access to tertiary education is essentially a social process deeply involved with the society's entire cultural pattern and system of values.

Historical circumstances that have caused a sharp breaking point to occur at the end of the secondary school

years have conditioned the entire process of admission to college. This break is artificial and arbitrary, for education in the current perspective is coming to be thought of as a seamless web, a continuous cradle-to-grave affair. Even the span of formal education - from kindergarten to the post-graduate research stage - is but a part of the whole. Having now learned to appreciate the determinative importance of preschool experience for infants and the continuity of growth and development made possible by adult education, the location of the school-to-college change-over, with the major reshuffling among students and institutions that occurs at this stage, seems essentially arbitrary.

"So intricate are the arrangements needed to make workable the business of getting into college that the practical tactics of admission often divert attention from the educational processes which are the heart of the whole matter. As in all complex and poorly understood social situations, unfounded beliefs, folklore, and oldwives' tales grow spontaneously. Popular opinion about college admissions represents it as a screening based on intellectual achievement and promise. So it is, in part; but this is by no means the whole story. The sorting process involves the interaction of sociological forces of many kinds. Some are so familiar and so subtle in their operation as easily to escape notice; they come to be taken quite for granted, on the principle that the last thing a fish would ever notice is water. We probably exaggerate the part played by rational, intellectual standards because these other forces are partly hidden by the protective colouring of habit, use, and wont." (1)

There is a dual process of affiliation to tertiary education. Firstly, the transactions involved comprise a type of symbiosis that unites the world of tertiary education to the larger society that contains and interacts with it.

(1) Thresher, B. Alden: College Admissions and the Public Interest College Entrance Examination Board, New York, 1966. (p. 4)

Secondly, the same transactions serve to connect the partially isolated society of a single nation with the cosmopolitan structure of the world of learning. These are both social processes of the greatest complexity. The ways in which they resolve themselves differ from nation to nation, but the basic social forces are much the same everywhere.

As secondary education continues to improve and as gross disparities in articulation between its subject matter and that of tertiary education decrease, such academic devices as "entrance prerequisites" play a lessening rôle. Although the prim college and university regulations about preparation and requirements that have evolved over three centuries were always intended as screening devices, most of the real screening has been done all along by the effects of socio-economic origins, early environment, and various levels of aspiration habitually characterising particular subcultures and groups. These forces have today become more complicated but no less powerful as they reflect increasingly the pluralistic nature of American society. Parallel with a decline in importance of entrance requirements, in the older sense, efforts have increased to select students on broad grounds of aptitude and intellectual promise, to understand the dynamics of personality as it affects motives and energy, and to fathom the dimensions of human ability beyond such deceptively simple, undimensional quantities as test scores and school marks.

However, there is much more to the problem than this; a study of the individual student provides only partial answers. The determining factors that control entry into tertiary education are rooted in the home and school environment of children from their earliest days, and the deeper social forces uniting them to society, remain dominant. What used to be termed "recruiting" on the part of universities and colleges is seen in our present perspective as a superficial attempt to rearrange the educational destiny of the limited number of the population that had managed to reach the twelfth grade without having its potential for further education destroyed or damaged. Through their long

evolution, formal entrance requirements have mainly resulted from rearrangements of material conventionally taught in secondary school in each epoch. In form they were set by the universities and colleges, but in fact they did not stray far from what the schools were currently doing.

The question of who should attain tertiary education is more than a matter of finances or admission requirements. It is basically a question of who does or should aspire to education. This aspiration, in turn, is more than just the functioning of degrees of talent. It depends deeply on the society's composite concept of what education means and what it can be expected to accomplish. The "level of aspiration" of the adolescent depends in subtle ways upon his neighbourhood and parental environment. These determine his ability to sense a connection between the spontaneous interests that his environment and education have aroused in him, and his expectations of achieving a place in the world as he is able to conceive of it. It is from this interplay that his educational goals, if they exist, are generated. The climate of opinion in which he grows up is probably the single most important determinant of his future, educational or otherwise. Although it is related to intellectual values it is determined even more powerfully by deeper and less rational influences abroad in the society that has nurtured him.

A convenient, though greatly oversimplified way of treating "the great sorting" process would be to schematise it into two areas, namely, the supply of, and demand for, students.

Facing the young people who go forth annually from the American schools is a system of tertiary education more varied in its origins, more diversified in its auspices and management, more chaotic in its atomised separation, covering a wider range of "standards" and possessing, perhaps, more vitality than any in the world. This is the "supply" side of the educational process. The ways in which these young people are drawn back, after varying lengths of time into

the social complex of the economy constitutes the "demand" side. Considerations from the demand side such as social mobility, economic productivity, manpower distribution and employability constantly reflect back to the supply side of the equation. The interaction of these social forces generates great stress and the admissions process acts as a focal point through which many of these stresses are transmitted. The procedures connected with admission to tertiary education, viewed in their full significance, are much more than a series of rules or customs. Through them are conducted social stresses, the study of which can tell much about the processes of the society that contains them.

The educational establishment, embedded in the social process, interacts with it not only by the inflow and outflow of students. It reflects the values and preoccupations of its own society and cannot easily rise above them but it remains, nevertheless, the critic of these values and preoccupations.

This newer approach began as early as the 1920s when a few universities appointed officers who were to be specifically concerned with undergraduate enrolment problems. The practice increased during the depression years because there was a practical necessity to recruit students. With the wave of post-war enrolments after 1945 the need for active recruiting was reduced and many state-supported institutions, access to which had become easy, began to tighten their requirements. Tests for admission came to be fairly widely used in what had virtually been "open-door" colleges.

After 1950 a new set of ideas began to appear and the question "Who should go to college?" began to be asked. The academic world was often discontented with the motivation and attitudes of many college and university students. (1)

(1) College and university teachers making these complaints seldom paused to consider whether some of the disaffection might be traced to a curriculum that seemed to the student to be remote from his concerns, to pendentic and dull teaching, or to an authoritarian atmosphere that discouraged both innovation and inquiry.

As this decade progressed the term "talent search" came to represent a slightly more advanced stage in public understanding about education. In the words of Thresher: "It marked the passing of the primitive notion that if one simply rang the bell and offered money for scholarships to all comers, any student worth helping would automatically appear, and that those who did not grasp at this opportunity were simply not worth wasting time on. It marked the first widespread departure from the notion that the only youngsters able to cope with higher education are those who know enough about it to want it. Talent, it began to appear, had to be searched out, helped, and encouraged. In large measure, it had to be created, granted some minimum initial endowment of native intelligence." (1)

Talent must be nurtured and encouraged at every stage if it is to survive and blossom. Talent, in fact, comes closer to being something produced than something stumbled upon and uncovered. In Europe, access to education has always been organised along traditional lines that implied a "pool of ability" manpower theory. It is significant that the Robbins Report in England explicitly disavowed this theory in 1963 and recognised the wide elasticity of the supply of able students, given the necessary conditions.

Not all children are equally intelligent. There is a genetic factor of great importance. But we simply do not know how to separate the genetic from the environmental component. We do know that intelligence can be increased by a favourable early environment, or stunted by a bad one and for the first time, the overwhelming importance of an adolescent's self-image and level of aspiration began to be grasped. The public began to realise that a major part of the preparation and predisposition for tertiary education occurs at home and during childhood, and that fairly specific habits, values and attitudes are required. If these are

(1) Thresher, B. Alden: College Admissions and the Public Interest College Entrance Examination Board, New York, 1966. (p. 12)

lacking few will surmount the handicap.

The acquisition of a self-concept that provides hope, status, and a respected place in the scheme of things - these are some of the powerful psycho-social forces that matter. It is clearly to this area that we must look for the changes to bring about broad and fruitful access to tertiary education.

Fifteen to twenty years ago, college admissions officers conventionally dealt with that small fraction of the twelfth-grade that was "college bound". In the light of current thought this fact is seen to be due to serious defects in social attitudes and in the educational system. Not all students are capable of great intellectual effort, but society has thus far scarcely made a serious effort to develop the talent it already possesses. Nor has there been more than a little progress made in understanding the dimensions of human ability other than intellectual.

The concepts that govern entrance to tertiary institutions of learning have been broadened and efforts have been made to assess "non-intellectual" qualities, to study biographical data, to experiment with "personality" tests, and to understand creativity. However, the focus in all these efforts has been on the individual. Little attention has been paid to the social forces that sway groups of individuals and entire subcultures. There has been a picking and choosing among the passive victims of vast, complex and largely blind social processes. There has been only a little progress in understanding these processes, and less still in controlling them.

What forces resulting from society's demand for talent impinge on the problem of access to tertiary education? Of the greatest importance is the changing nature of the manpower problem and the demand of the employment market. Early in the twentieth century the small percentage of young people who continued into the tertiary education stage, was made up mainly of those aiming at the traditional learned professions; there was also a growing number of prosperous

businessmen who were affluent enough to introduce their sons and much later their daughters, to the deeper currents of learning then stirring under the influence of European university models. The basic roots were there: in science from the time of Silliman at Yale; in graduate study on continental models, from the founding of Johns Hopkins; and in a group of institutions like Rensselaer and Massachusetts Institute of Technology that began to feel the rapid growth of industry and transport from the end of the nineteenth century.

The vast economic development in the United States up until the First World War was accomplished with only a very small minority of college graduates. Partly as cause and partly as a result the university curricula only slowly evolved out of the pedantic and limited version of classical studies which had come to characterise nineteenth century America. One of the most powerful forces for change from the demand side was the deep popular feeling for the pragmatic in education, which led first to the academies and later to the passage of the Morrill Act in 1862. These land-grant colleges and the state colleges and universities modelled after them, were the outcome of the deep need for relevance in education - relevance to the problems of a vigorous economy, an expanding frontier, and industrial revolution and a tide of immigration.

World War II proved to be a turning point and it became obvious for the first time that the kinds of people emerging from the universities and better-quality undergraduate colleges, were greatly needed. In the era of the newly-developing countries, foreign aid, the Peace Corps and the sophisticated technical needs of the age of space and automation, the university, on a worldwide basis, is seen above all as a producer of needed people.

Between the two major forces that keep educational institutions in business there exists a kind of continued tension. On the one hand we have the practical and immediate, and on the other the importance and fascination of

disinterested learning and an awareness of the fact that education undertaken solely with a practical view in mind can be insufferably dull.

Curricula in the liberal arts colleges are at present interfused with subjects having a professional or occupational flavour, while institutions devoted to professional fields, whether business or engineering, find it necessary for their graduates to experience liberal arts subjects. It is a curious anomaly that educators in the United States and many parts of the world have been so long in recognising that both of these elements are essential to education. For too long educators have treated them as mutually exclusive and have not heeded Whitehead's words:

"The antithesis between a technical and a liberal education is fallacious. There can be no adequate technical education which is not liberal, and no liberal education which is not technical; that is no education which does not impart both technique and intellectual vision." (1)

Thus the demand side of the talent equation feeds back continually into the supply, shifting its emphasis and direction. This feedback sometimes follows too closely the ephemeral fluctuations in the job markets but basically, the job market and its broad tendencies must be followed.

Yet another complicated set of social forces comes into play here: social mobility and the desire for it; parental ambition, customary levels of aspiration, regional and ethnic groupings with special objectives. Such influences impinge upon the admissions process, affecting the demand for education, the direction it takes, and the way it affects individual colleges. These, then, are some of the social complexities with which the problem of admission to tertiary education is entangled.

(1) Whitehead, Alfred North - The Aims of Education and Other Essays New York: The Macmillan Co., 1929. (p. 74)

2. THE COMMUNITY COLLEGE

The community college is founded on principles established in the nineteenth century by educators who anticipated the societal changes that would lead increasing numbers of young people and mature adults into post-high school education. They were unable to reconcile their visions of the research-oriented university with the large numbers of students who would soon be seeking some form of tertiary education. They therefore postulated a system of community colleges to relieve the senior institutions from dealing with freshmen and sophomores. These colleges would be buffer institutions and would act as feeders to the universities by sorting and screening matriculants and allowing the fit to continue into higher education. As they developed, the colleges assumed other responsibilities - remedial and vocational education, guidance, and community services.

The comprehensive community college of the 1970s has grown large by promising something for almost everyone. It aids university attempts to maintain restrictive admissions by offering an alternative route to those who cannot gain entry. (1) It creates an opportunity for young and old to attend college in their home town at minimum expense and with little advance commitment. Admission is relatively easy, the tuition fees are modest and often the student may work and attend college at the same time. He need not devise long-range plans for college attendance and neither he nor his family need commit large amounts of money for tuition fees. The community college provides the industrial community with a ready source of workers trained at public expense and it professes to be a community agency that attempts to mitigate all urban ills. As a result the 1,200 community colleges are growing in number and size at a greater rate than that of any other segment of tertiary education.

Higher education is in a state of turbulence. The universities are accused of being archaic, restrictive,

(1) In most states, the community college refuses no one who has graduated from high school and/or has attained the age of 18 or who can benefit from such instruction.

elitist, unresponsive to their students, and indifferent to the people of the cities where they are located and they are under attack from within and without. However, the community colleges have escaped much of this sort of criticism. Their remedial education courses are praised for correcting the defects in education with which the social system and lower schools are unable to cope. Its open admissions provide evidence that no one - regardless of aptitude or ability - is barred and its comprehensive range of courses offers something for everyone.

Because the promise is there the community college rides the crest of popularity. The student unrest which has plagued many universities has not really affected the community colleges. The popular press which is frequently critical of senior colleges and universities, has often lauded the community colleges because they are responsive to community needs and elected officials, who for years have made political capital by attacking the universities, support these colleges because they promise to keep the young off the streets, sort them ostensibly according to their aptitudes, and offer everyone a chance to succeed. During the 1960s while many people were attacking or defending the senior institutions, the community college grew considerably, mushroomed in the backyard of higher education, as it were, and took its place as a major force.

Because of large enrolments the community colleges have concomitantly high claims on public funds and although their total financial support is small when compared with that of the universities, it is growing at a faster rate. Community college salaries are lower, the libraries are smaller and physical plants (1) less elaborate therefore a student at one of these colleges costs the taxpayer less than half the amount of his university counterpart - a fact of considerable political significance.

(1) Physical plant - an expression used in the United States to indicate buildings, equipment, facilities etc.

Community college supporters are quick to capitalise on the expanding enrolments by remarking: "Here are students who would never have been able to attend college had it not been for the existence of a community college". (1) The colleges readily attempt the tasks that other educational institutions have not managed to control adequately - keeping the young out of the labour force, training them for careers, providing them with basic skills, helping them to find their place in society - in short, they provide an overflow receptacle for those whom the universities are unable or unwilling to serve.

Jencks and Riesman do not concur with the general support offered to community colleges and state that because the proportion of bachelor's degrees awarded since the community colleges began enrolling large numbers of students has not increased, the community colleges are not "an alternative path to the top for individuals, but rather a safety valve....that....allows the universities to go their own way without facing the full consequences of excluding the dull-witted or uninterested majority." (2)

Also critical of community college efforts was a recent report authorized by the United States Department of Health, Education and Welfare which sees the promise of the community college "rapidly being undermined (because) the public, and especially the four-year colleges and universities are shifting more and more responsibility onto the community colleges for undertaking the toughest tasks of higher education." (3)

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- (1) This point does have considerable validity because each time a community college opens, the number of high school leavers in the area who go to college, rises dramatically.
- (2) Jencks, C., and Riesman, D. - The Academic Revolution Garden City, New York: Doubleday, 1968. (p. 492)
- (3) Newman, F. - Report on Higher Education Washington, D.C.: Government Printing Office, 1971. (p. 57)

In an article (1) entitled "The Coming Slums of Higher Education", Thomas Corcoran suggests that the question at the heart of the debate over the future of community colleges is whether they are to become the slums of higher education. Corcoran claims that the present system of community colleges is neither egalitarian nor just and that the Carnegie Commission's recommendations to expand this type of institution can therefore hardly be regarded as desirable.

There can be little doubt that the availability of community colleges has increased access to post-secondary education. However, as Corcoran points out, the real questions are "access for whom?" and "access to what?". The primary beneficiaries of the community college have been middle-class students of average ability who seek either an inexpensive and unpressured way to enter the baccalaureate stream or an easy way to satisfy parental or peer expectations. It is therefore not surprising that a disproportionate number of community colleges are located in suburban areas and that urban areas are underserved.

Community colleges also profess to increase access for adults to basic, continuing and non-credit vocational education, yet, while they undoubtedly do serve the needs of some adults in some communities, the effect is often exaggerated. Recent data shows that only a quarter of the freshmen at community colleges are over the age of 21, and only twelve per cent of all full-time students are over 25. As Corcoran remarks: "While these are higher percentages than at four-year institutions they are hardly a basis for claiming that community colleges effectively serve all age groups." (2)

Community colleges do provide opportunities for many people who previously had no educational options and many of

(1) Corcoran, T.B. - "The Coming Slums of Higher Education" Change Vol. 4, No. 7, September 1972. (pp. 30-32)
(Community Colleges Edition)

(2) Ibid. - (p. 32)

the technical programmes offered were previously either not available at all or not widely available. However, in most community colleges entry into these various programmes is regulated by selective admissions. The research of John Huther and others has shown that in a majority of these colleges the open door policy only allows access to remedial or developmental education from which few pass into a specific curriculum.

According to Corcoran, community colleges have some clearly negative effects on the number of choices facing those who want to continue their education after high school:

(i) They have helped reduce the diversity that has characterised American tertiary education since a large number of small private residential colleges, often serving special groups or interests, have closed their doors during the last decade because of financial crises. Community colleges have probably contributed to these problems because their low tuition fees have drawn students from the private sector.

(ii) Community colleges include in their curricula a number of training programmes that were once conducted by business and industry or by unions and professional societies. Thus activities that once took place in the workshop have been transferred to the classroom. The current interest in co-operative education indicates a growing awareness of the educational consequences of this trend, but the trend has not been reversed. The construction and expansion of community colleges reflects a conscious decision not to utilise resources in the private sector.

(iii) Public comprehensive institutions undoubtedly discourage new educational activities such as special purpose institutions. However, there is considerable evidence to suggest that special purpose institutions such as technical institutes, music schools, secretarial colleges and the like, are more effective and provide greater student satisfaction.

(iv) Many community colleges now have several campuses but only a single administration; in such districts students

can choose which campus they wish to attend, and in some parts of the country there is considerable commuting across district lines. The opportunities for real choice are limited, however, by the similarity among these institutions and the existence of tuition fee penalties imposed on students who live outside the district.

"The nett effect", states Corcoran in the concluding paragraph of his discerning article, "is to provide a severely restricted range of institutional choice for all those who cannot attend four-year colleges. In most areas the local community college has a virtual monopoly on post-secondary education. Their monopoly is similar to that held by the public schools on lower education, with similar consequences. As a result, the affluent have many educational possibilities, while the rest of us have a choice of curriculum, if we are fortunate, at the local community college." (1)

What then does the community college really offer? This can be answered from several points of view. To an individual student graduating from high school and unsure of his next move, the college provides a socially acceptable place to spend time. A young man may enrol for a few courses, "drop out" when he finds employment, "drop back in" if he loses the job, study a little longer, then move on again. He may enter the armed services and find the college waiting for him when he returns. Previous academic failure is not a deterrent; nationwide absolution is granted - there is always a new course in which to enrol.

To the teaching staff the community college offers prestigious positions. Because less than seven per cent of the academic staff holds doctoral degrees most are disqualified from holding positions in major universities. More than a third of the teaching staff are former secondary school teachers who often view the college as a step upward

(1) Corcoran, T.B. - "The Coming Slums of Higher Education" Change Vol. 4, No. 7, September 1972. (p. 32)
(Community Colleges Edition)

on the career ladder as well as being a growing enterprise.

To the community at large the community college means many things. Businesses and corporations view it as a source of trained personnel and a call for skilled workers in a specific field causes college administrators to hasten to organise a new technical curriculum. The parents of children who must be "college educated" if they are to maintain a sound social position, regard their tax money as well spent in an institution that guarantees admission regardless of academic standing. Whereas many taxpayers are resisting spending money on elementary and secondary schools, the community college promises new visions and offers different dreams.

A. A Sorting Function

Although some of its well meaning advocates make elaborate claims for the community college, it is not a magical phenomenon that has arisen to solve the social ills of the time. Instead it must be viewed in the context of the total school system as one element in a straight-line system leading from the pre-school period to the Ph D. Since Ph Ds are being awarded at a rate of approximately one for every 112 children who entered elementary school twenty-five years ago, it follows that 111 people must be eliminated somewhere along the way. Whereas two generations ago most of the "dropout" took place between elementary and high school, in this generation, more people leave between high school and the end of two years of college than at any other point. If these trends therefore continue, in a generation or two the problem of sorting out and screening will be one to be handled at post-graduate level, but at present it is the task of the community college.

In describing this sorting function Illich (1) and

(1) Illich, I. - "The False Ideology of Schooling"
Saturday Review, October 17, 1970, (pp. 53, 56-60)
 Illich, I. - "The Alternative to Schooling"
Saturday Review, June 19, 1971, (pp. 44-48, 54, 56-60)

Reimer (1) have both concluded that the schools (used in the broad sense of the term) also act as indoctrinational agencies by convincing the young that people who have been to school are in some way better than people who have not and that, if a young person does not graduate, it is his own fault - not that of the school. It is not enough for the college to screen its matriculants; it must convince them that they have an equal chance to succeed.

This allocative function is one of the strongest in the community college. By using placement examinations (devices created for the purpose of finding dissimilarities among people) and marks earned at high school, the college places people into particular programmes. In a book written by Clark this process is described: "The assistance is initially gentle. A common case is the student who wants to be an engineer but whose test scores and school grades indicate that he is a nearly hopeless candidate." (2) The counsellors do not insist that he stay away from the transfer programme but urge him gradually towards a career programme which is more consistent with his abilities. If the student insists on entering the college level courses, the "counsellors can become more severe later in the sequence when they have grades as a talking point and the student is in trouble." (3) Gradually the student becomes hemmed in and is forced to become aware that he cannot obtain an academic degree and that he must redirect his life goals.

The counsellors are not the only sorting agents since most other institutional procedures are based on "norms" and whether a student is enrolled in a transfer or a remedial course, he is sorted, judged, and screened in comparison with his fellows. Arthur Cohen and his associates have summed up the situation thus: "The instructor whose mission is to sort

(1) Reimer, E. - An Essay on Alternatives in Education (2nd ed.) CIDOC Curaderno 1005. Cuernavaca, Mexico: Centro Intercultural de Documentacion, 1970. (181 pp.)

(2) and (3) Clark, B.R. - The Open Door College: A Case Study New York: McGraw-Hill, 1960. (pp. 71-72)

people shuffles student responses to vague questions, placing ever finer discrimination upon them until the scores conform to a curve of normal distribution probabilities. He adjusts his 'objective' test items so that his examinations are better able to discern shades of difference among the students. When his students cluster near the top of the scale on one examination, he makes the items more 'difficult' on the next; if the scores are too low he prepares 'easier' items. Back and forth he adjusts the 'difficulty index' so that by the end of the course, if he has done well, his student's score on a 100-item quiz range from 45 to 95 with a mean, median, and mode of 70. Whereupon the instructor announces, mirabile dictu, students are innately different and he has distinguished the differences. The allocative function has been well served." (1)

It must be said in all fairness that instructors and counsellors are often unaware of the way in which they impose a selection process. However, the sorting function is at times quite deliberate. It is often defended as a genuine service to protect senior institutions from the less able students and to help local employers. If community colleges did not fail half of their entering students, universities would soon be swamped. If the colleges do not "redirect" large numbers of the remaining students into career programmes, these courses would find few volunteers. Most students go to college to be in college and only rarely have they made fixed and firm occupational decisions. The community must be served and the community college must screen, sort and certify the young and this process is in reality a major function of this institution. The success which this institution has achieved in maintaining the allocative function is evidenced by high and rapid student attrition rates. On an average about fifty per cent of first year "dropouts" occur during the first six weeks of the fall semester. Thus the student has been led to believe that he

(1) Cohen, Arthur M. and Associates - A Constant Variable (an ERIC Clearinghouse for Junior Colleges publication). San Francisco: Jossey-Bass, 1971. (p. 181)

has had a chance at college and this has been achieved at minimum public expense.

Public universities formerly used the freshman year as a type of admission screening and those who failed were abandoned while the remainder were allowed to enter upper-division courses. Now that all states have developed (or are developing) community college systems, the universities are free to select their students by using College Board scores and high school grade-point averages, sending the remainder to the community college. The implied second-class status involved here and strong societal pressures still results in many students pounding at university doors demanding open admission policies.

B. A Custodial Function

Although often an unacknowledged service to the community, the custodial function is well played by the community college. This institution continues the custodial work of the elementary and high schools by holding the students well into what would have been regarded as adulthood in an earlier era. The value and significance of the custodial function is well documented by writers like Kistler (1) who noted how much the rate of crime in Los Angeles dropped during the day as soon as the police instituted a campaign to pick up lower-school truants.

This function ensures the continuation into tertiary education of many practices associated with social training. Because young people go to college to socialise it is important that they should be entertained so that the college remains more appealing than a park, a local youth centre, or the street. Thus we note that organised activities in the form of sports, clubs and other functions are continued into community college life even though such activities are often played down in universities. The custodial function is supported by financing arrangements and if a student is not

(1) Kistler, R. - "Drive on Truants Cuts Crime Rate"
Los Angeles Times, Jan. 20, 1971, Part 1. (pp. 1, 28)

at the college the institution loses some money. In Michigan, for example, district reimbursement is allowed on the basis of credits obtained but generally the public school pattern of average daily attendance is retained. As Cohen remarks: "And what is the practice of granting draft deferments to students 'in good standing' if it is not custody in another guise? School, jail or army - the young man is offered his choice of institution with which to affiliate." (1)

C. Future Development

Where are the community colleges heading? The Carnegie Commission (2) envisions the need for 230 to 280 new community colleges enrolling 35 to 40% of all undergraduate students by 1980 - providing that federal and state financial aid is markedly increased. Greater centralisation with state plans establishing guidelines for curriculum development, finance and interinstitutional co-ordination is anticipated by Medsker and Tillery. (3) Among the future determining issues and problems four can be easily identified:

(i) Clearer identification and definition of the place and status of the community college within the total American school-college-university system of education for the masses;

(ii) The retention of focus on local community and individual student services when basic state and institutional policies on financing, curriculum offerings, and administration, are formulated;

(iii) Determining the most effective balance of student-staff-administrator participation with lay members of boards of control and with official statewide co-ordinating agencies

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- (1) Cohen, Arthur M. - A Constant Variable (an ERIC Clearinghouse for Junior Colleges publication) San Francisco: Jossey-Bass 1971. (p. 183)
- (2) Carnegie Commission on Higher Education - The Open-Door Colleges Policies for Community Colleges A Special Report and Recommendations by the Commission New York: McGraw-Hill, 1970. (74 pp.)
- (3) Medsker, L.L. and Tillery, H.D. - Breaking the Access Barriers: A Profile of the American Junior College New York: McGraw-Hill, 1971. (183 pp.)

in governing structures and procedures;

(iv) The development of valid and reliable methods of assessing the educational output or productivity of the programmes of educational services and instruction offered as a service to the local community, state and nation. (1)

It seems likely that during the 1970s there will be a greater recognition and reliance on the community college as a full-fledged step in the formal American school to university plan. However, within this broad framework many points still need refining. The bearer of chief responsibility, initiative and accountability for effective articulation of learning experiences from one educational level to another, for example, is as yet not clearly defined. Is it the high school authorities who must bend their curricula to fit what the community college academic staff and administrators demand or vice versa? Should community colleges be made accountable for the adjustment of students to upper-division colleges or should the latter be held responsible for developing programmes and using methods of instruction that continue where community colleges leave off? Even in those states with well-developed community college systems these and other related questions have not yet been fully answered.

Many of the attempts made to answer such questions are closely linked to the structure and procedure for advanced planning of tertiary education in various states. In states which have a clear policy for maintaining a statewide perspective of educational requirements and resources, sound answers to these questions are being provided. Without this careful planning educational vacuums develop such as a lack of sufficient programmes for baccalaureate and higher degrees and consequently there is pressure on community colleges to add upper-division and post-graduate programmes. With concerted overall planning states can keep in balance the

(1) Adapted from a paper by S.V. Martorana entitled - Planning New Structures of Post-Secondary Education: Community Colleges in the United States Paris: OECD, 4th February, 1971. (pp. 43-44)

need to provide qualified manpower for the economy and full opportunity for continuing education for all high school leavers who can profit from it, and assure that the educational system of schools, colleges and universities is as complete and yet as economical as financial and other resources permit. In these instances there is much less chance of there being either gaps or wasteful duplication in educational planning. California, Florida, Illinois, Oklahoma and New York all provide evidence of such advanced planning. In such states the community college has been given a definite place in the total educational system.

3. EDUCATIONAL CHANGE IN THE 1970s IN THE UNITED STATES OF AMERICA

"We see in all clarity that many of our institutions are ill fitted to cope with the tasks the modern world presses on them. Yet we find those institutions apparently incapable of change, even in the face of attacks by those who would destroy them altogether. Unless we are willing to see a final confrontation between institutions that refuse to change and critics bent on destruction, we had better get on with the task of redesigning our society."

John W. Gardner - in
"The Recovery of Confidence"

A. Introduction

It is axiomatic that change in society must be mirrored in education and vice versa. Current reports on innovation in education might give one the impression that American schools, universities and colleges are keeping pace with developments in society. Yet it is all too clear that a large number of classrooms are unaffected by the many radically new procedures and ideas which have been developed and which are being advocated in education. This situation is not confined to any one level but is characteristic of all levels of education. As H. Thomas James observed in the summer of 1967 "Change is more talk than reality in most of America's primary and secondary schools". (1) And, at the

(1) Quoted in James, H. Thomas: "Educational Change", School and Society, XCV (Summer 1967) (p. 1)

level of tertiary education, which ought, of course, to lead the field in innovative ideas, it is notoriously difficult to change any part of a curriculum.

Comfortable complacency with the "tried and true" is one of the many reasons which causes colleges and universities to resist change for it is easier to meander along a smooth plain which long experience has shown to be fairly safe than to pick one's way across the uncertain terrain left by the upheaval which innovation could conceivably create. Educators are very aware of the fact that innovations do not always succeed and they fear the risk and the consequences involved in an experiment that might possibly fail. The result is that they become prone to inertia which they excuse on the ground that the equilibrium may be disturbed by yielding to change.

In the western world, at least, the cultural environment is unquestionably changing rapidly and will continue to do so. As Sir Eric Ashby has expressed it, since "educational systems are the mechanisms for the inheritance of cultures", it seems clear that western education must soon face the problem of "how to overcome the inertia of educational systems without upsetting their stability". (1)

Although education is at present one of the largest "growth industries" in the United States, it still suffers in many ways from the malady with which it has long been afflicted, namely, its notorious slowness to change its own internal arrangements. It is true that education has accepted and has tried to fulfil the rôle that society has demanded of it, and it has greatly broadened its objectives over the years. Yet despite all this Philip Coombs has been led to remark somewhat bitterly: "It is no exaggeration to say that there has not been a profoundly radical innovation in the technology of education since the introduction of the

(1) Ashby, Sir Eric: Burglars Under the Bed, Man in 1980
Paper No. 2 (Aspen, Colombia: Aspen Institute for
Humanistic Studies, 1967) (pp. 11-12)

book in the 17th Century until the recent appearance of television." (1)

The validity of his statement, made more than a decade ago, appears not to have altered. In a review of a book published in 1965 and entitled Higher Education: Some New Developments, Rosemary Park remarks that many of the "new developments" reported in the book are remarkably similar to those in colleges and universities of the last generation. "Some with long memories", she observes; "may reach the conclusion that a really new thing in education is hard to find." (2)

The watchwords of this century, which have arisen in a world turbulent with political, social, economic and scientific change of great pace, force and high order of complexity, have become: "The one certainty in life is change," and "There is nothing permanent but change." Change has become commonplace and it will be the capacity of society (and the educator) to adapt to successive changes that will remain the price requisite for survival. Amidst the drastic changes which have been evidenced and the startling projections of things to come the question must inevitably be asked: Are these new developments of fundamental significance or are they merely superficial, striking only at peripheral aspects of the life and work of mankind? The voice of concern and wisdom bids us recognise the magnitude of twentieth century change while also cautioning that the fundamental verities of life are constant. As Charles Malik states:

"....the mystique of change must be closely examined."

"It may be we are pinning our faith on a fallacy, on a fanciful flight of the imagination, when we say, 'Everything changes' and 'there are no limits to change'. What if the

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- (1) Coombs, Philip H: The Technical Frontiers of Education, The 27th Annual Sir John Adams Lecture at UCLA, March 15, 1960. (UCLA School of Education, 1960) (p. 8)
- (2) Book Review in Journal of Higher Education, XXXVIII (March 1967) (p. 171)

most important matters do not change, and if they do, what if it will not be by dint of human effort? Civilisations rise, decay and perish; that fact does not seem to change.... Man envies and hates and schemes and lets himself go; that fact does not seem to change. Man must die; that fact does not seem to change...."

"When we take all these matters in their concrete totality, we are before something eternal....Change, then, touches only the less important, the form and circumstances, the setting and surroundings, the instruments and conditions - never the heart and the essence." (1)

Coming from a distinguished philosopher and world statesman the words: "Change, then, touches only the less important", must command our attention for society will indeed be the poorer if citizens, and especially educators, neglect the reality of lasting values and are blinded by the superficiality of the obvious. The examination and appraisal of change will be more valuable if viewed against the essential touchstone proposed by Malik.

Looking back a generation to the early 1930s one can easily observe some of the great changes in our society which have occurred during the last generation and which vitally affect the educational needs of people in many countries in the world. While examining a brief outline of these changes every educator will inevitably be compelled to determine whether or not, in his own educational responsibility, he has given adequate attention to the impact of these occurrences on educational institutions. Here follow some of the things that have happened:

(a) Urbanisation

The concentration of populations in the cities and their consequent expansion has been accelerated by many factors, for example, the capacity to produce more food on less land and with greatly decreased manpower.

(1) Malik, Charles: "Reflections on the Great Society", Saturday Review, XLIX, August 6, 1966. (p. 12)

With the shift of population came also the attempt to resurrect the cities from the state of decay into which many had fallen. Despite the renewal which has resulted, vast numbers of minority group peoples, living in a depressed state, have created inner-city problems of great proportions.

(b) Scientific and Technological Advances

Advances in this field have increasingly led to the mechanisation of menial jobs and the growth of specialisation in vocational and technical job requirements, and regular changes in these requirements. Resulting from mechanisation there has been an increase of white collar jobs in relation to blue collar jobs.

The formation of large companies to process the results of scientific discoveries has led to the growth of bureaucratic organisations and also to the establishment of unions by industrial workers.

Improvements in communications and the advent of mass media have resulted in rapid changes since these media penetrate man's consciousness almost every moment of the day and are so affecting his life and habits as to constitute a remolding process to which he is involuntarily subjected.

(c) Societal Changes

The change in the rôle of women, including married women in employment, has resulted in continually rising incomes, the results of which are reflected in the living standards of people and in rapidly increasing geographic mobility.

An awareness of the significance of race attitudes has been forced upon people and a recognition of social responsibility for the poor has accompanied this awareness.

A general decline in traditional sanctions for law, order and ethics has been a disturbing feature of the last twenty years and coupled with this decline has been the inability of local governments to manage, control and finance vital issues and a resultant movement towards central government control.

Increasing leisure time, shorter working hours and the proliferation of knowledge are exercising considerable influence on the lives of all citizens. Society is shifting its foundation from that of natural resources to human resources and it seems reasonable to assume that the most important ingredient of our new age will be ideas, and its key institutions will be universities, colleges and schools. The growth industries of the next generation will possibly not be factories but centres of education, communication and research. Gilbert Burck describes the knowledge industry as the largest industry of all:

"The sheer size of the industry, however, is not so arresting and important as that it has been growing twice as fast as the economy itself.... The production of measurable knowledge goes on expanding faster than the economy because it generates, as well as feeds on, economic growth....the biggest single factor in the nation's rising productivity is the growth of the knowledge industry." (1)

Not all the changes have been named, but the educational consequences of this complex package are enough to show that the dynamic changes have been numerous and that they are continuing. The impact has been substantial at every level of the entire educational structure. The reaction of western educational systems to needed improvement has been slow. Fortunately, however, there is a current ferment in the world of education that is speeding the process of educational coverage, research and improvement which this evolving era demands.

Rapid and drastic changes make effective human relations more essential at the same time that they become more difficult and complex. The advances in science, technology, and productive income have caused a lag in our dealings with social, political and humanitarian affairs for none of the changes mentioned gives any assurance of easing or eliminating current conflicts in human relations - in family or community

(1) Burck, G. - "Knowledge: The Biggest Growth Industry of Them All" Fortune, LXX, Nov., 1964. (p. 130)

life or between nations.

The traditions and values of our age are being re-examined, challenged, and sometimes, discarded. In art and music new forms and media are exhibited and espoused while drugs have become fashionable as young people enjoy psychedelic experiences and take part in "happenings". Pills of various sorts and other easy methods of birth control have resulted in a new freedom in sex, and in the field of morals and ethics basic Judeo-Christian traditions are being questioned and some writers are referring to the present time as the "Post-Christian Era", while radical philosophers are proclaiming "God is dead".

It is difficult, when faced with the task of weighing these and other bewildering changes, to conclude with Malik that "they touch only the less important". Many of these changes seem to strike at the very heart of the fundamental values by which we live and are indeed important to man and to society.

4. CLAMOUR FOR EDUCATIONAL CHANGE

Although it is difficult to find anything in education that is actually new, there is a rising clamour of voices demanding change. Steadily increasing demands for education, both qualitative and quantitative, make radical changes necessary. Traditional methods and procedures are inadequate to comply with present requirements, much less those of a decade hence. However, parallel with the demand for innovation, taxpayers are raising questions about rising costs for education. In many states people are resisting the mounting costs of public education by rejecting new levies and bond issues at elementary and secondary school levels and this situation also applies to tertiary education.

Writing in 1969, Lamar Johnson of the University of California (Los Angeles) said as follows:

"A recent national Gallup poll reveals the views of parents, school board members, school administrators, and teachers regarding the importance of innovation in education. All three groups agreed that change is necessary. 'Change

in the curriculum and change in teaching methods are looked upon as imperatives,' the report stated. Yet the cost of change seems to be questioned when the burden devolves upon these same groups as taxpayers. This strange paradox prompts one to ask with George Herbert, 'Wouldst thou both eat thy cake and have it?'" (1)

The demand for the "best" and the "newest" in education continues despite the fact that expenditures in this field are more closely examined and questioned than in any other public or private enterprise. Industry and commerce widely accept developmental research as a basic ingredient of progress and advancement and are willing to pay heavily for it. Writers (2) in this field have rated finance as one of the main obstacles to promising new developments in education. Both Coombs and Wiesner observe that it is doubtful whether educational research and development expenditures, even generously defined, amount to more than a tenth of one per cent of total expenditures on education in the United States in contrast to three, four or five per cent in progressive industries and ten per cent in the military.

Closely allied with education's proneness to inertia and its slowness to change its internal arrangements is the fact that even when new ideas and developments emerge and are advocated by leaders in the profession, their general acceptance and rate of diffusion is slow. The predictable pattern of change in education was described in the research work of Mort and his co-workers in the 1930s and 1940s. Although it is true that the time lag of 50 years which Mort (3) first mentioned as being necessary for the widespread

(1) Johnson, B.L. - Islands of Innovation Expanding: Changes in the Community College Beverly Hills: Glencoe Press, 1969. (p. 19)

(2) For example: Wiesner, J.B. - "Innovations and Experimentation in Education" in Science and Society: A Symposium. Rochester, N.Y. : The Xerox Corp., 1965. (pp. 71-72)

Coombs, P.H. - "The Technical Frontiers of Education" The 27th Annual Sir John Adams Lecture at UCLA, March 1960. (p. 13)

(3) Mort, P.R. - Principles of School Administration New York: McGraw-Hill, 1946. (pp. 199-200)

adoption of a new educational idea (later changed in the 1940s to 25 years) has been accelerating more rapidly in recent years (1) nevertheless the rate of diffusion in education still lags notably behind that in industry, agriculture, and medicine.

Writers in the field of educational innovations have suggested several reasons for this lag. Rogers, for example, states that one reason may be the absence of a scientific source of innovations in education; another, the lack of change "agents" to promote new educational ideas; and a third, no economic incentive to adopt innovations once change agents have been made available. (2) This third reason highlights the fact that increased productivity has no immediate economic value for the educator because he is paid on the basis of longevity and personal educational attainment rather than on net output, itself very difficult to measure. Only the education enterprise is faced with this unique situation and for this reason the accelerated innovation diffusion rates anticipated in the last quarter of this century are indeed encouraging.

Change is taking place in American education because great social pressure is being exerted in this direction. A recent national study of 7,350 accredited high schools came to the following conclusion:

"High schools have changed their curricula and ways of organising for learning more in the last decade than in any previous period of time." (3)

Ianni suggests that although a great deal of attention is at present being given to educational "hardware" and to

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- (1) The acceptance of teaching aides, programmed instruction, team teaching, and nongraded courses, for example, can be cited as evidence of this fact.
 - (2) Rogers, E. - Diffusion of Innovations New York: The Free Press, 1962. (p. 39)
 - (3) "National Innovation Study Indicates Broad Attack on School Weakness" North Central Association Today (Special Issue), XI (May 1967)

the marvels of technology, the main hope for the future lies in the development of four ideas ("software") which have liberated our attitude towards experimentation and innovation:

- (i) The realisation that we have hardly scratched the surface of man's ability to learn;
- (ii) The insistence on the importance of individual differences in learning ability and the resulting primacy of individualised instruction;
- (iii) The quiet but consistent growth of the concept of diagnostic teaching to complement individualised instruction; and
- (iv) The new value orientation in education which demands quality as a companion to equality of opportunity. Each of these ideas, states Ianni, has been far more powerful in producing the climate for change than any computer or new school design. Each will do far more to ensure that change has some direction and innovation has some motive, than any of the revolutionary pieces of hardware. (1)

Perhaps the great need in education is to keep in perspective the values of both educational "hardware" and "software" and for the leaders in this field to restrain those who would seek all answers in technology while ignoring those who believe no answers are to be found there.

Lamar Johnson has summed up the question of change in the following words:

"There is no hierarchy in America which limits man's need for knowledge. Nor must there be any hierarchy which limits his opportunity to acquire it. Precisely because of this, education has a solemn duty to equalise educational opportunity and concurrently to divest itself of the pedestrian tools of instruction that sufficed a half-century ago and take aggressive steps in the direction of updating its processes and procedures. Change is required and demanded - not

(1) Ianni, F.A.J. - "Culture System and Technology in Today's Schools", in Impacts on Education Today, Major Papers of the 67th Annual Meeting, National Society of College Teachers of Education (place and date of publication not given), (p. 5)

merely change for its own sake, but planned change that will provide the means for better serving every citizen in the land. Some changes have already been made. More are needed." (1)

5. THE COMMUNITY COLLEGE AND CHANGE

The community college, with an active history of seventy years, could be regarded as a relatively young institution and is itself an evidence of change in American education. Initially created to provide two years of university-parallel undergraduate work, it has expanded its rôle and functions to serve a variety of educational, community and social needs. The very spirit and potential of the community college, as it relates to innovation and change, is aptly stated by Spencer:

"The junior colleges seem to me to offer our best chance to stimulate genuinely fresh investigations, and then do something about the answers. Free of the rigid traditions which tie most schools and colleges to their administrative and instructional arrangements, junior colleges can tinker with all sorts of new ideas and put them to work in their classrooms." (2)

The community college, Spencer has implied, is especially responsive to demands for change and innovation because of its very youth.

In each successive generation an increasing percentage of American youth has entered high school and college or university. In 1900, only 11% of the young people of high school age were in school. Today, the percentage is 95. In 1900, 4% of college/university age youth was in college while today enrolments exceed 40%. This demand for tertiary

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- (1) Johnson, B.L. - Islands of Innovation Expanding: Changes in the Community College Beverly Hills: Glencoe Press, 1969. (p. 29)
- (2) Spencer, L.M. - "A Publisher Looks at Innovation", in Invitational National Seminar on the Experimental Junior College Palo Alto, California: Science Research Associates, Inc., 1967. (p. 5)

education increased greatly after World War II and in 1947 a report of the President's Commission on Higher Education stated that: "The time has come to make education through the 14th grade available in the same way that high school is now available." (1)

Many people disagreed with the Presidential Commission's report. They saw in it the threat of reducing higher education to mediocrity because of the fear that standards would be jeopardised by the admission of students bent on accumulating college credit although lacking the ability to assimilate college content.

However, despite these dire predictions, by 1960, the President's Commission on National Goals had recommended that community colleges be placed within commuting distance of all high school graduates, except those in sparsely settled regions. (2) And, in 1964, the Educational Policies Commission of the National Education Association was of the opinion that: "the Nation's goal of universal opportunity must be expanded to include at least two further years of education, open to any high school graduate." (3)

The consensus of the several President's and other commissions that a nationwide system of free public education lasting two years beyond high school be established, was further supported by a subsequent report of the National Commission on Technology, Automation, and Economic Progress, and added to the growing demand towards making community colleges available to all citizens of the United States.

By 1966, a book published under the editorship of Earl J. McGrath, further advanced the concept proposed in the

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- (1) President's Commission on Higher Education - Higher Education for American Democracy New York: Harper & Brothers, 1947. (p. 37)
- (2) President's Commission on National Goals - Goals for Americans New York: Prentice-Hall, Lin., 1960. (pp. 7, 91)
- (3) Educational Policies Commission - Universal Opportunity for Education Beyond High School Washington, D.C.: National Education Association, 1964. (p. 6)

various national commissions. In this book (1), twelve leading Americans in the area of higher education, in addressing themselves to the question of universal tertiary education, no longer questioned the validity of the goal nor did they doubt its eventual achievement, rather, they focused on the necessity of achieving the goal and on how to do it. Writing on the need to attract people to college and university and the developing of plans to educate millions of people who are dropping out of school before and after having completed high school, Commager (2) comments as follows:

"There is now every reason to believe that we will need - and require - an additional two years of schooling for most of our young men and women. A high school education is now what a grade school education was a generation ago; a college education is little better than a high school education was then. Even now those with only a high school education are at a desperate disadvantage in the marketplace; that disadvantage will grow."

Few people can write with more authority on the place and purpose of the community colleges than Edmund J. Gleazer, President of the American Association of Community and Junior Colleges. In a new publication, resulting from an extensive examination done recently in nearly a hundred community colleges, he summed up the significance of these institutions thus:

"Signals in the environment register no diminution in social importance of the community college. Its essential place in a changing society is widely recognised. Community colleges are doing more than respond to change - they influence the direction of change in our society by the priorities they establish. In my visits to community colleges and in my conversations with people in state capitals nothing impressed

(1) and (2) McGrath, E.J. (Ed.) - Universal Higher Education
 New York: McGraw-Hill, 1966 (article by Commager, H.S.
 "Social, Political, Economic and Personal Consequences"
 (p. 12))

me more than the call for the college 'to be there', a kind of people's college, an educational resource for the community, a liberating means for people in a society where opportunity of education means opportunity to live as a person." (1)

(1) Gleazer, E.J. - Project Focus: A Forecast Study of Community Colleges New York: McGraw-Hill, 1973. (pp. 238-239)

CHAPTER FOURCOMMUNITY COLLEGE CONCEPTS WHICH LEND THEMSELVES TO
TRANSFER OR ADAPTATION

In the last chapter the milieu of access to tertiary education in the United States and the ethos of the community college was briefly considered in broad outline.

This chapter now examines certain specific aspects which have emerged from the more general view just given. Factors which motivated the choice of the areas about to be described included the following: their flexibility and adaptability; their impact on the community college and the likelihood that they would stimulate thought in other parts of the world; their innovative or different approach; their functionality and educational value; and, lastly, the author's personal interest and involvement in these concepts.

The fact that the areas selected are but five out of a vast array of potentially beneficial concepts does not detract from the fact that they may well be influential in bringing about a revolution in some spheres of educational thought in a country as far removed as South Africa.

1. COMMUNITY SERVICES AND COMMUNITY INVOLVEMENT

"Perhaps community service programmes can be instrumental in restoring our faith that institutions of higher learning are humanely concerned with the development of the individual and the community in which he lives."

Max Raines and Gunder Myran

A. Introduction

The basic theme underlying current social revolution may be summarised in the phrase "institutions were created to serve man, man was not created to serve institutions". Whether it be a college or a university, a corporation, a church, or a governmental agency - the central focus of the attack has been the failure to respond to basic human needs in a humane and direct manner. There is little doubt that

a central challenge in the 1970s is to discover (and rediscover) methods of humanising the institutions which serve the community.

Gradual acceptance as partners in the tertiary education enterprise, combined with their essentially community-oriented approach, has enhanced the community college's position with community leaders and citizens. These colleges are now in a strategic position to facilitate individual and community development while many educational leaders have been impressed by the potential of community colleges for significant community service.

B. The Concept of Community Services

Ever since the responsibility for providing community education was accepted by community colleges in the 1930s it has been recognised as one of the major functions of this institution. However, the concept of community services emerged slowly into prominence and is only now working its way towards the centre of the community college stage. The full potential of this function has not yet been realised by all institutions but there is reason to believe that the next great thrust of community college development will be in the direction of community services.

In response to community needs and interests, most community colleges, by virtue of their increase in numbers and capability, are under pressure to fulfil their commitment to comprehensive programmes. Social pressures resulting from community disintegration and the crisis in the American society intensify this situation. The community colleges, whether voluntarily or not, are increasingly being identified as a major focusing point in the provision of compensatory and continuing education for adults. The colleges are gradually accepting the rôle of facilitator and catalyst as community projects are planned and implemented.

In the community colleges of the United States, community education is made available under many different guises: Community Services; Continuing Education; Evening College and Adult Education. Many other titles are also

used to identify these courses. More than 700 community colleges offer various types of community education and forty per cent of these institutions employ a full-time administrator (or equivalent) to manage these courses.

The American Association of Junior Colleges Community Services Project (1) was developed in response to this trend and has convened a number of national, state and regional conferences. The AACJC has also aided institutions in the developing of community educational services by providing consultants. The AACJC project has also resulted in the formation of the National Council on Community Services for Community and Junior Colleges. The 224 members of the National Council have entered into liaison to further the development of community-oriented courses and have thus improved communication among professionals and others trying to further community services.

A monthly newsletter, The Forum, provides constructive ideas on community services to a wide audience. The AACJC publishes an annual directory of community services leadership while a series of articles is being published to probe, in some depth, the problems and procedures of a comprehensive programme.

C. Community Services - Recent Trends

The 1960s were characterised by rapid technological and social change and it was in this period that community services emerged as a clearly identifiable component of the community college. The community college has been obliged to provide a more viable base for the development of human resources in the community and also to help solve problems related to race, poverty, technology and urbanisation. Clear response to this demand can be seen at many community colleges at two levels:

(1) The American Association of Junior Colleges (AAJC) has recently changed its title to incorporate the community college. Its official title is now American Association of Community and Junior Colleges (AACJC).

(i) the community services division within many colleges is growing rapidly in scope of service and in terms of staff, and

(ii) service to the community is increasingly an orientation of the community college as a whole.

In the developmental period of community college acceptance, various programmes have in turn been emphasised by these colleges throughout the country e.g. transfer programmes, vocational-technical programmes and student-personnel programmes. In the same way it now appears that community services is emerging as the mainstream of programme development for the 1970s.

The primary challenges which confront community services programmes today and which will influence their future development relate to providing increased service to the poor and to the black community, improving planning and teaching methods, and expanding communication and articulation with other "serving" groups in the community.

Of all the courses offered by community colleges, community services most clearly reflects the socio-economic structure of the society. For this reason these courses are the most difficult to transplant and are the most provincial of all courses. The traditional approaches of the entire college may well be influenced by the community services courses since educational services extend to community groups, untouched by conventional college programmes, and new and innovative organisational and instructional approaches are often required. Community services courses are an attempt to break down social and college barriers and bring the college more into the community where the action is.

D. Community Services - One of the Major Functions of the Community College

Community services is one of five major functions of the community college and provides programmes, courses and activities to serve those individual and community needs not best served by college and university degree or certificate

programmes. In fulfilling this function almost all community colleges, by virtue of their title, have an obligation to become a centre of community life by encouraging the use of college facilities and services by community groups when such use does not interfere with the college's regularly-scheduled courses. They are also obliged to provide for all age groups educational services that utilise the special skills and knowledge of the college staff and other experts and that are designed to meet the needs of community groups and the college district community at large. The community college must also make available to the community, including business and industry, the leadership and co-ordination capabilities of the college, assist the community in long-range planning, and join with individuals and groups in attacking unsolved problems. One final obligation remains within the scope of the community services offering and that is for the college to contribute to, and promote the cultural, intellectual, and social life of the college district community and the development of skills for the profitable use of leisure time.

Because it is rooted in the soil of the district community it serves, and draws its students and strength from that community, the community college is particularly suited to act as a community services agency. Several characteristics of the community college uniquely qualify it to offer these services:

(i) The community college is a community-centred institution with the primary purpose of providing service to the people of its community. Its programmes are developed with the active participation of local citizens.

Colleges and universities generally serve large areas often drawing students from the entire state in which they are situated, from distant states and even occasionally from overseas. As a consequence it is difficult for them to establish a sense of "community" even with people living within commuting distance. The result is a strengthening of the concept that they are exclusively institutions for educating young people.

As Harlacher expressed it in a recent book (1):

"The school, church, family, business, labour etc., have tended to go separate ways, developing almost in isolation from each other; American life has become fragmented as well as specialised. There has been no force to draw the basic institutions together, to give to each other the uniqueness that each possesses. So geographic communities have existed without 'community' - without a real concern and commitment within each institution for each other institution, without a sense of community among heterogeneous people."

(ii) Since the community college is often a creation of citizens of the local community or area and since it is most frequently governed by a board of local citizens, the community college is readily capable of responding to changing community needs.

(iii) The community college is a relatively new segment of American education and is therefore unfettered by tradition. Therefore, without duplicating existing services in the community, it is able to tailor its programmes to meet local needs and conditions.

(iv) In most instances the community college is disinterested in terms of the community power structure because it has no profit motive and no axe to grind.

Whether it has been called continuing education, adult education, public service, community education or community services, service to the community beyond offering collegiate degree or certificate courses has long been a major objective of the community college. No matter what the title of the course has been, the objective has been to serve the community through credit and non-credit courses, counselling services, cultural activities, and a wide range of educational services which are directed towards specific personal or community needs rather than towards the attainment of certificates or degrees.

(1) Harlacher, E.L. - The Community Dimension of the Community College New Jersey: Prentice-Hall, Inc., 1969. (p. 8)

Community services in the community colleges evolved most dramatically in the period after World War II and continued at an accelerated pace into the 1960s and 1970s. The "open door" of the community college has become a "double door" with two-way traffic resulting in greater involvement of the college in the life of the community and greater participation of the community in the life and concerns of the college.

The environment in which the community college is located determines the scope and nature of the community services offered. Those services offered in an urban setting will differ considerably from those in a rural setting. Rapidly changing economic and societal conditions may mean that those services which were suitable in a college in 1950 are substantially different from those which may be appropriate in that college in the 1970s. It would be true to state that it is possible to name and describe many courses carried out in community services at various colleges at the present time. But to describe the nature and scope of these same courses ten years hence would be mere speculation.

E. Community Services - A Definition of the Area

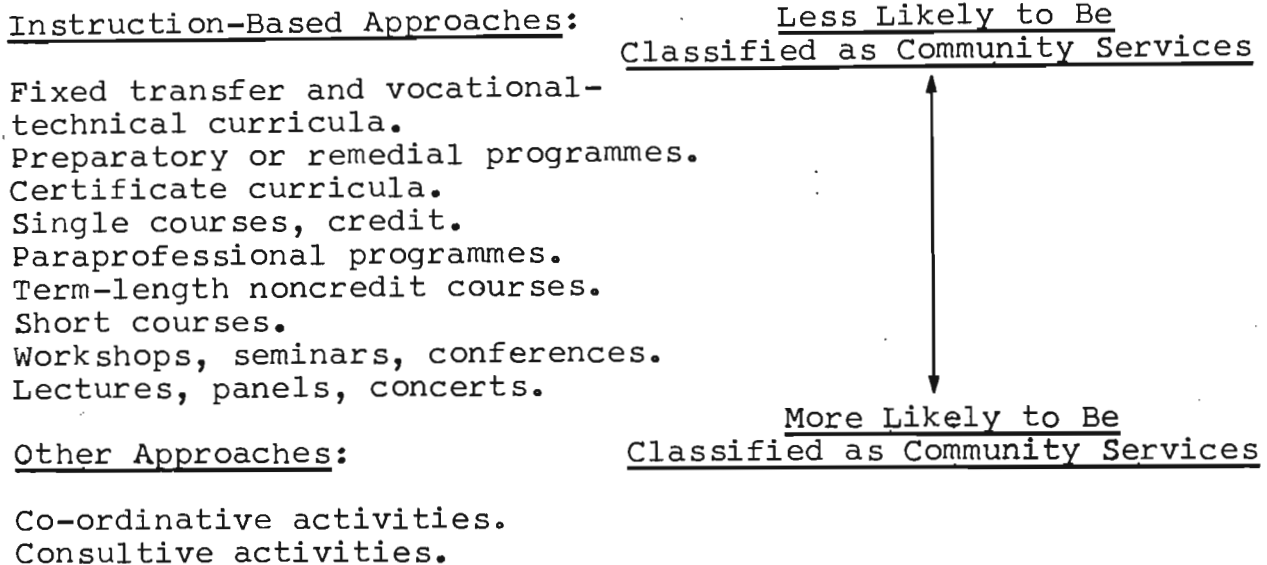
Philosophically one might argue that all courses in the community college could be called community services but there is certainly not general agreement among the public as to what courses, programmes and activities fall within the scope of the concept of community services. However, there has been a tendency to create divisions of community services by separating the administration of degree and certificate programmes from the administration of short courses, seminars, workshops, lectures, concerts, consultations, community studies, and social action programmes.

Because there is a variation in programmes, courses and activities and the way they are administered under the title of community services, it is difficult and perhaps not desirable to attempt any form of universally-applicable

definition of this concept. Diagrams 1 and 2 as conceived by Gunder A. Myran (1) take full cognisance of this lack of agreement.

DIAGRAM 1

Educational Approaches of the Community College



The educational approach is obviously not the exclusive determinant of whether or not a course or activity will be considered a community service. The degree to which the offering is considered as having a community-centered orientation is perhaps more important. The differences in orientation between various courses are clearly stated in Diagram 2.

(1) Myran, Gunder A. - Community Services in the Community College Washington: American Association of Junior Colleges, 1969. (p. 13)

DIAGRAM 2Orientation Differences in Community Services ProgrammesLess Likely to be Classified
As Community Services

Subject-matter orientation.
Not related or indirectly
related to community.
Emphasis upon deliberate study
of issues and problems.

Instruction formalised in terms
of content, grades, credits,
examinations.

More Likely to be Classified
As Community Services

Problem-solving orientation.
Directly related to community

Emphasis upon immediate
response to concrete and
contemporary issues and
problems.

Instruction formalised in
terms of the needs, aspira-
tions, and potentialities
of people.

The following definition of community services serves only as a useful guide for it gives recognition to the dichotomy between community services and formal collegiate certificate and degree programmes while also reflecting its community-centred orientation:

Community services represents those attempts by the community college towards serving personal and community educational needs which are not met by formal collegiate and university certificate and degree programmes. These efforts are often undertaken in co-operation with other community groups or agencies.

Community services create appropriate educational programmes while drawing together resources in the community and the colleges and also identifying unrealised potentialities and unmet needs. All of the resources available in a college may be used for the purpose of community services: credit courses as well as non-credit courses, day as well as evening classes, on-campus activities and courses, and programmes for youth and for adults. The financial, personal and physical resources of the community may also be utilised to enhance the opportunities thus created.

F. Community and Individual Development

Those community services designed to improve and change the lives of participants through planned counselling and educational experiences are embraced within the term self-development. The main object of this exercise is that participants should emerge from these experiences prepared to act in different and better ways and having developed new and different goals.

Those efforts of the community college to improve the social and physical environment of the community in co-operation with organisations and citizen groups, are described as community development. Although total community improvement is the basic concern of community development, the community college enters most into the picture where the changing attitudes of people are involved i.e. increasing the concern of the people for the welfare of the community in such areas as education, community planning, housing, minority group relationships etc. The organisational environment, from a social, political, and economic point of view, can be improved through the co-operative efforts of local agencies and groups and the community college. All this is done so that citizens may be provided with increased opportunities for participation in community life and for achieving personal fulfilment.

These two phases are both encompassed within the concept of community services. They are in many ways interdependent and they often merge, for in changing and developing one, the other is invariably involved.

Max R. Raines of Michigan State University, has prepared a taxonomy of community services functions which describes the present scope of community services and provides, in reality, a tentative definition of community services - one in which taxons may be added, deleted, or changed as the concept of community services in the community college evolves.

The taxonomy (1) is divided into three categories, two of which have just been more fully described.

(i) Self-Development Functions

Those functions and activities of the college primarily focused upon the needs, aspirations, and potentialities of individuals or informal groups of individuals to help them achieve a greater degree of personal self-realisation and fulfilment.

(ii) Community-Development Functions

Those functions and activities of the college primarily focused upon co-operative efforts with community organisations, agencies and institutions to improve the physical, social, economic, and political environment of the community (e.g. housing, transportation, air pollution, human relations, public safety, etc.).

(iii) Programme-Development Functions

Those functions and activities of the community services staff designed to procure and allocate resources, co-ordinate activities, establish objectives and evaluate outcomes.

G. Community Services and Continuing Education

The more recent development of community services as a basic function of the community college has been accompanied by certain semantic difficulties. The terms community services and continuing education are often used in a single expression "continuing education - community services programme" by speakers wishing to communicate the concept. An examination of these two terms is therefore necessary.

Russell J. Kleis of Michigan State University offers the following definition of continuing education:

"Continuing education may be defined as any deliberate effort of a person, whose principal occupation has ceased to

(1) Ogilvie, W.K. and Raines, M.R. (editors) - Perspectives on the Community-Junior College New York: Appelton-Century-Crofts, 1971. (pp. 404-408)

be that of student, to seek learning as a means of developing potential or resolving problems in himself, his institutions, or his community, or the deliberate effort of another person or an institution to produce such learning in him." (1)

This broad definition of continuing education embraces all learning activities engaged in by people, either in groups or individually, who have moved from a "principal commitment to studenthood to a principal commitment to adulthood," or to put it simply those who are committed primarily to adult responsibilities such as a family or a job rather than to a formal educational programme.

If one analyses the above definition it becomes clear that continuing education and community services are not mutually exclusive. Because the one includes elements of the other it is unwise to attempt a minute delineation of these terms. One obvious point, however, is that community services may be provided for all age groups in the community, while continuing education implies service to adults. Generally the community services programmes are fairly closely linked with community development activities although it could perhaps be argued that this is also the domain of continuing education. Such community services as community use of college facilities, speakers bureaus, art galleries, and community surveys, are unlikely to be labelled as continuing education.

One of the best known forms of continuing education in the community college are the on-campus evening classes for adults. Whenever these courses aid personal and local community development in the social, economic, civic and cultural spheres, they would obviously also be classified as community services. If, however, these courses are simply extensions of the day-time college transfer curricula and are regarded primarily as credit classes, then the right to call them community services is debatable.

(1) As quoted in Myran, Gunder A. - Community Services in the Community College Washington: AAJC, 1969. (p. 16)

Professionals in continuing education are also concerned about the college transfer courses that are simply taken out of the day schedule to be accepted by the adult evening student carte blanche. Whether called community services or continuing education, there is agreement that the structure of these courses should take cognisance of the experience and motivations of the adult student if they are to be relevant to his needs.

The community college will have to learn to use both these terms and rather than argue about the virtues or meanings of one term or the other it will be better to allow regional practice and personal preference to determine which titles are used for programmes.

H. The Students in Community Services

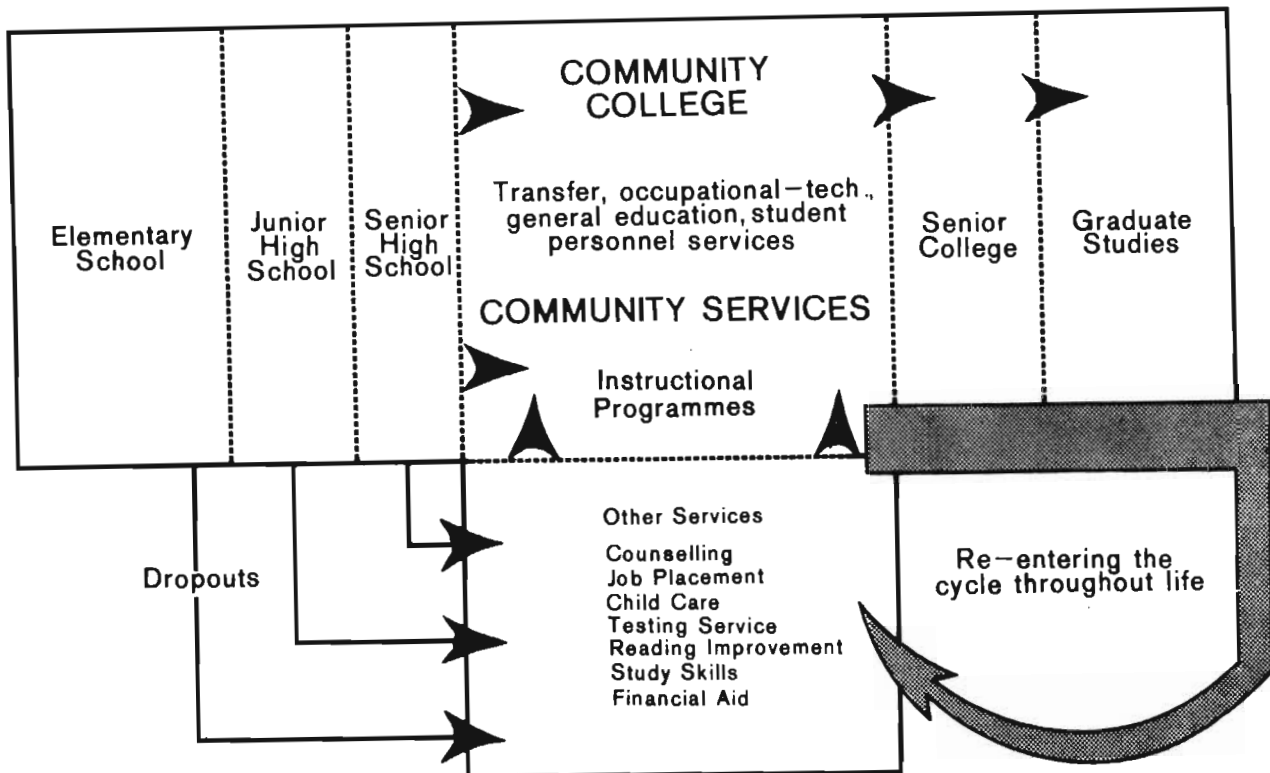
The American educational systems have always catered well for those students who follow the normal progression through high school, community college and/or senior college, and perhaps graduate school. The students who follow this pattern mainly come from the socio-economic groups in the community which are well able to articulate their needs, and which, generally, control most school systems. These students can easily return into the educational cycle at any stage throughout their lifetime and they often become participants in community services seminars, conferences, concerts etc.

Community services programmes are also intended for the lower socio-economic groups in the community which are less likely to be able to articulate their needs. Young people who have dropped out of school and others who have educational deficiencies simply cannot re-enter the educational cycle without specialised help. For these students, courses which reach beyond the instructional programme are essential to give them the confidence, information, skills, and financial assistance needed to re-enter the educational cycle. Such courses may lead people into community services instructional programmes, such as paraprofessional training or other educational experiences or to enrolment in a planned college.

course. This type of course also increases the ease with which these students can re-enter the educational cycle at any stage of their life and is illustrated by means of the following diagram:

DIAGRAM 3

Community Services and the Educational Cycle



I. The Development of the Concept of Community Services

What principles should guide the development of a community services programme in a community college? Three possible suggestions which might form the basis of the concept are:

(i) Permeation: Sensitivity to community problems and potential and a commitment to community services should permeate all areas of the college. No single administrator

or division can be held entirely responsible for community services: it belongs to all divisions of the college. A community services programme should be founded on strong, comprehensive, community-orientated courses in the liberal arts, vocational-technical areas, student personnel services, and general education. In this way community services becomes the focal point through which administrators, teaching staff and students become more sensitive and responsive to ways in which the resources of the college can be used by the community. Increased knowledge of the community and its needs also results in curricular changes which make the entire programme of the college more relevant to the community it serves.

(ii) Penetration: The college should penetrate into community life by means of the community services programme and in so doing it should attempt to meet the present needs of the people it serves. The need in problem-ridden American cities and rural areas is for constructive action; the traditional rôle of the college as a centre purely for study and research is not acceptable any more. The community college must improve its record of action - of direct involvement in community problem-solving - and it can do so by reaching out beyond the campus to help people and institutions solve their problems and realise their potential.

Increasingly in the 1970s, the community college will become a part of the interdependency system of institutions in the community. This interdependency has resulted from the fact that complex social problems in the community require solutions which are partly educational in nature and the college correspondingly needs citizen participation in planning, staffing, and evaluating courses if it is to remain relevant to the rapidly changing character of its community.

Religion was once the centre of community life; the churches were often physically in the centre of the community, and their influence permeated the daily life of the residents. Later economics, symbolised by the central business district, became the focus of community life. Today it appears that

education is moving towards a more central rôle in the community, as rapid social and technological changes turn our attention from the work week to the work-study week.

Ultimately, if sufficient penetration has occurred, the community college will be viewed as an educational and cultural centre of the community. It could become an educational resource for all types of community activity: developing new ideas for community improvement, serving all ages and segments in the community, and facilitating and co-ordinating the work of other service groups and agencies in the community.

(iii) Education: The primary legitimacy of the community college as an institution is derived from its educational rôle and the community services dimension derives its legitimacy from this same rôle. The community college is not a governmental agency, nor is it a social club, a social welfare agency or a labour union. The community services offerings in a community college are legitimate only to the extent that they are an expansion of educational resources directed towards the economic, social, cultural and civic needs of the community.

The place of the community college in the provision of community services could be summarised in the following way:

The community college cannot always initiate social, civic, cultural, and economic change; its rôle may often be a supportive or co-ordinative one. It will often occupy a place as a partner in reference to personal and community development because (i) educational approaches are only one component in such development; (ii) the college does not have all the necessary human, financial and physical resources; or (iii) those directly involved perceive the resources of the community college as applicable only to certain aspects of their problem.

J. Organising, Staffing and Financing Community Services

Under the present fiscal and personnel structure most community colleges are not willing to make the vast investment of human and financial resources necessary to allow them to

play a central rôle in solving community problems. Few community colleges have either the money or the personnel to undertake this task and this very fact indicates that new ways of doing the community services job are evolving both because it is necessary and because it is desirable.

Organising a community services programme does not require the same procedure as initiating a new degree programme. One of the things which distinguishes a community college which has a true commitment to community services, from one not so committed, is the way the differences or departures from traditional modus operandi for general degree initiation are emphasised. Examples of these differences may be:

(i) Since community services relate to all age groups in the community, the development of this sort of programme requires a balance of commitment to the education of adults and the education of normal college-age students.

(ii) Community services programmes may be either non-credit or credit and of whatever duration is needed to achieve the goals of the course. Such courses are not confined within semester units of time.

(iii) There is often movement away from the campus to other bases for instruction. Extension centres, mobile units, store-front classrooms, and use of governmental and business buildings are examples of places of instruction which may be located in many different parts of the community college district.

(iv) One of the characteristics of community services is the informal and non-traditional approach towards instruction. Community services programmes provide a great deal of room for experimentation because they are free from the legal and academic restrictions which are evident in most areas of the college. The so-called "project method" is one of the many experimental approaches used in community services. When a community need is identified, a course is designed as a project requiring a specified period of time for completion, and money is sought to fund the project through the governing

board of the college, or from government or foundation sources. Upon completion of the project the staff is either retained for another project or their services terminated.

(v) During the last few years it has become fairly common to appoint a director of community services to administer this area of the college.

(vi) As a result of the development of community services, positions such as community relations specialist, programme planner/co-ordinator, counsellor aide, and project director have emerged.

(vii) The best possible human resources are typically used to carry out community services programmes and often teaching certificates or other legal requirements are waived.

(viii) Participants involved in community services programmes are seldom required to fulfil any type of admission requirements.

(ix) During 1968 a W.K. Kellogg Foundation-supported study of community services in thirteen two-year colleges, revealed that several colleges took into consideration the concept of community services in their campus architectural design and are emphasising community use in the design of new campuses. One of the colleges visited in this study was building a new campus which views community services as the "master integrator" of the plan. Facilities used mainly by full-time students, and those used primarily by the public, will be linked by a "forum" which provides buildings to be shared by public and full-time students. Another community college visited was developing a new campus which is designed for convenient public use and the building usually known as the student centre has now become the "community centre".

(x) As educational efforts, which involve co-ordination with other community groups, are expanded the administrative control which the college may exercise over these courses must be modified. By sharing administrative control a structure results that allows the college to be more rapidly influenced by community needs and changes.

(xi) Community services inevitably leads to an expansion of the rôle of the college and to the offering of courses beyond the customary organised classes. The college often becomes involved in the beautification of the local area, community studies (economic deprivation, water pollution etc.), co-operation in improvement projects, and assisting community groups in planning conferences.

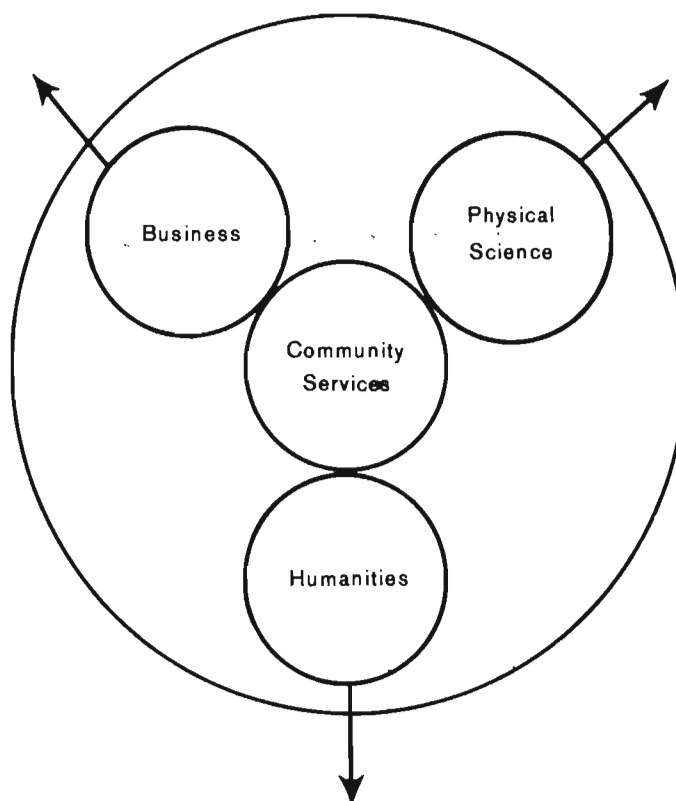
(xii) The development of a system of community feedback to aid in curricular changes is essential. Short courses or seminars (developed by a community services division) which initially met community needs may become organised certificate or degree programmes.

(xiii) Community services activities bring about increased participation of citizens on the college campus. Concerts, lectures, seminars and forums encourage people who are not involved in credit course offerings to visit the campus.

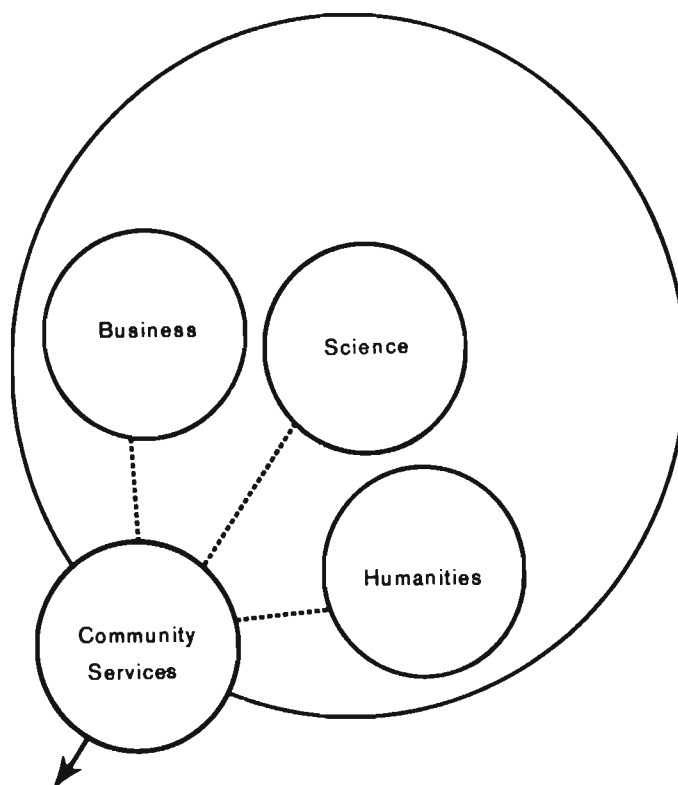
(xiv) Many community services programmes help create courses for the development of community groups which have not articulated their needs in the past. These people with long-term educational and vocational deficiencies are among those who have been ignored in traditional community college curriculum development.

K. Organisational Patterns in Community Services

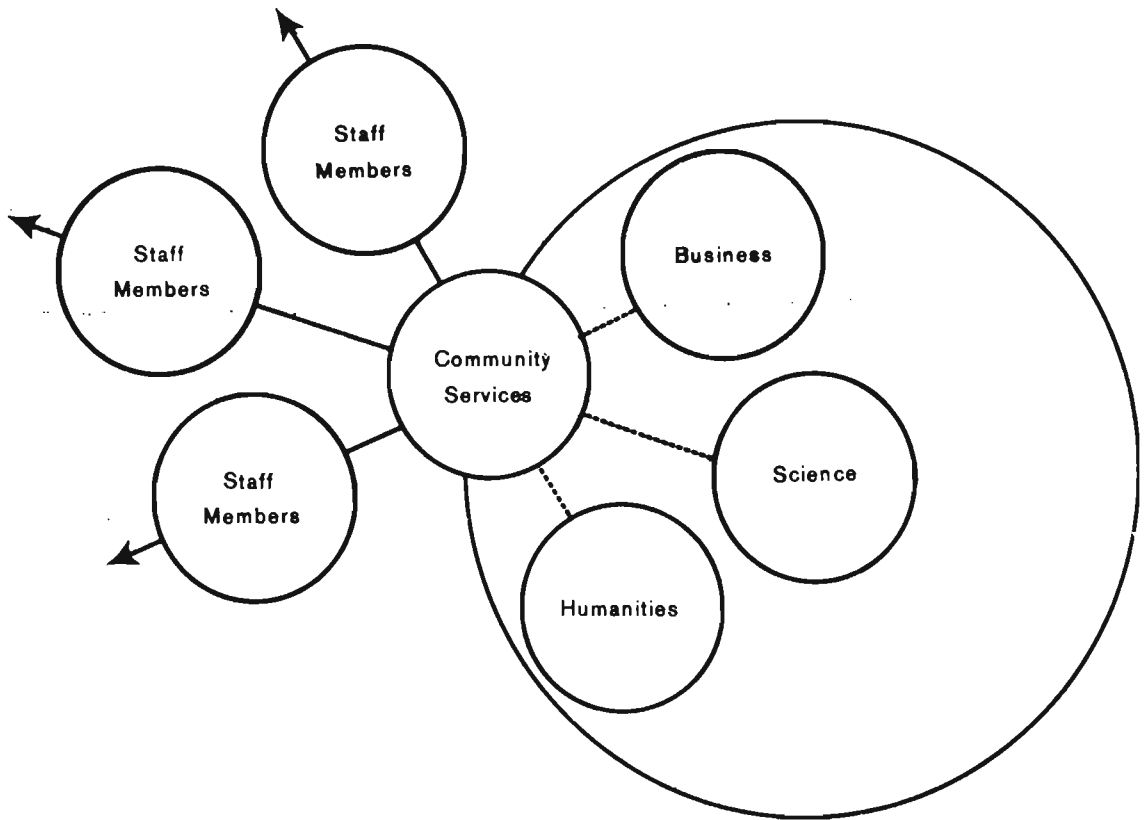
When studying the organisation of community colleges and the way in which community services are integrated into the whole, certain patterns of organisation emerge. No college is likely to fit one of these patterns exclusively but may combine parts of several patterns. Five typical organisational structures are:

DIAGRAM 4Departmental Extension Plan

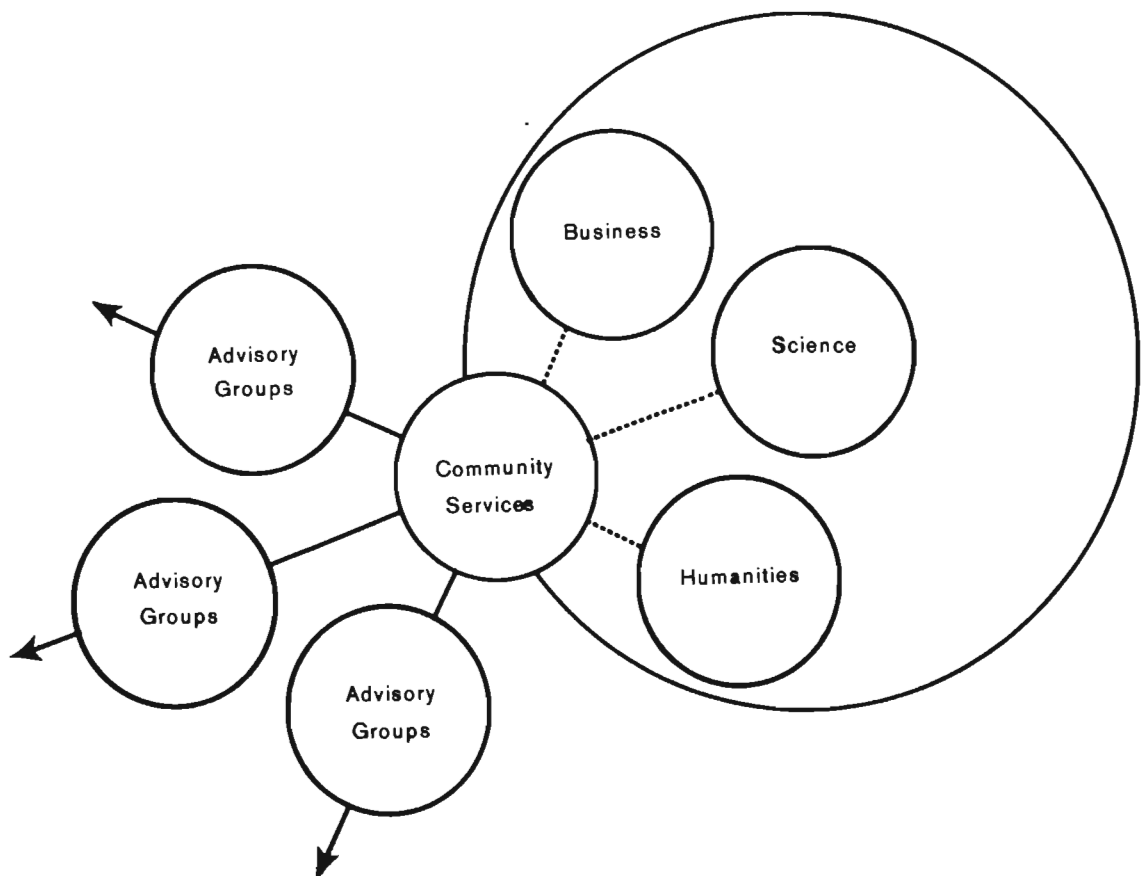
The average college's instructional programme is based on disciplinary areas such as humanities, physical science, and business courses. In this pattern community services are also perpetuated through the departmental structure. Various departments offer short courses, exhibits, lectures etc., in accordance with the way in which staff members within each department perceive community needs. In this pattern a staff member may be appointed to perform a co-ordinative function in promoting and administering programmes developed by departments of the college.

DIAGRAM 5College Centralised Pattern

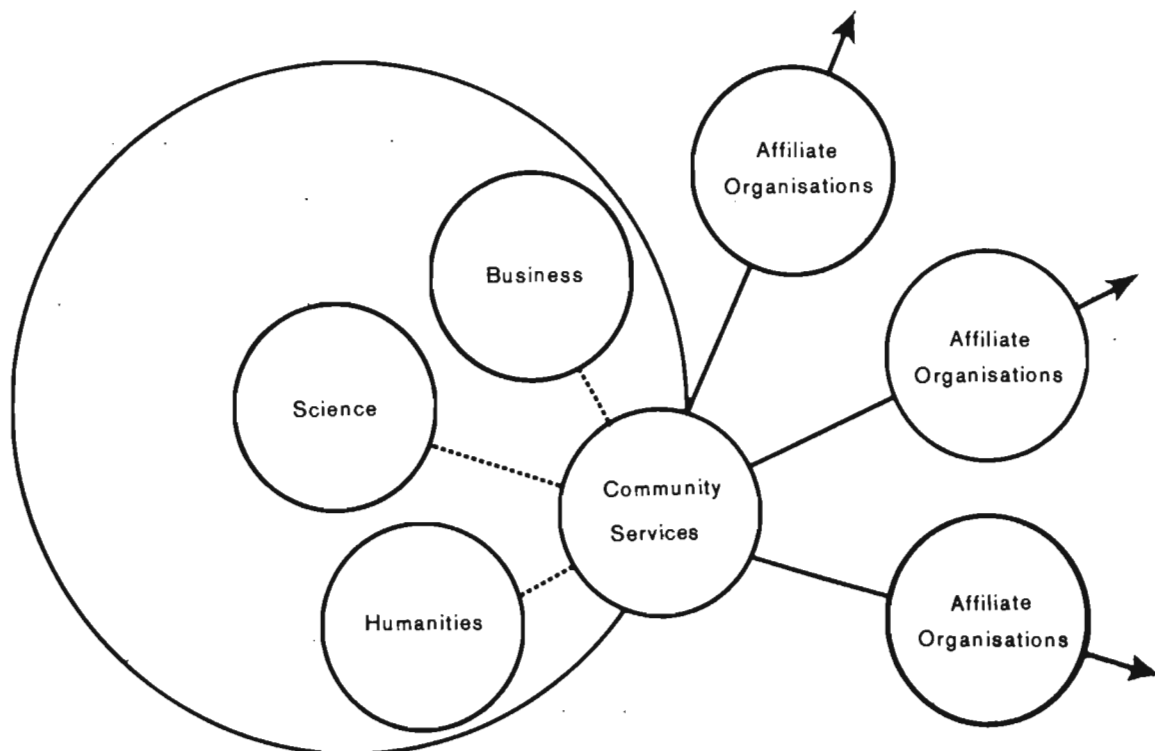
A differentiated administrative structure is established which is responsible for community services programming. In this pattern, professional staff members in a community services division spend a portion of their time identifying needs through meetings and professional contacts, and a portion of their time co-ordinating the programmes which are developed. Those who study and analyse community needs are "centralised" in a department or division of community services. Emphasis is on a professional community services staff. Division chairmen and staff members are more likely to be "reactors" than "process initiators" since the focus of needs in the college centralised pattern shifts from the academic divisions to a community services division which is an identifiable part of the organisational structure.

DIAGRAM 6Community Specialist Pattern

The goal of maintaining a sensitivity to community needs is achieved by employing staff members whose locus of operation is in the community rather than on the college campus. Staff members may be assigned to carry on liaison activities with industry and business, the professions, disadvantaged groups etc. These people serve as "antennae" of the college by identifying needs in their area of specialisation, and become process initiators of new courses at the community college. These staff members may be called community relations specialist, or counsellor.

DIAGRAM 7Community Advisory Group Pattern

Most community colleges make use of advisory committees, using them mainly for "reality testing" in designing courses of instruction. In this pattern, however, advisory committees play a more crucial rôle in sensing community needs in their area of specialisation (e.g. health, law, engineering), in designing new programmes, evaluating present ones, and in promoting these programmes to the potential students. The college may have a staff member who is a co-ordinator of the various advisory committees. In addition to the more common semi-permanent advisory committees, this pattern includes ad hoc committees dealing with critical issues.

DIAGRAM 8College Affiliate Pattern

This pattern moves basic units of community services beyond the administrative structure of the college. Administrators of these units will have a direct responsibility to organisations in the community other than the college, and will have an "affiliate" relationship with the college. Minimal financial support will come from the college. In this pattern, sensitivity to community needs and the identification of problems for which the community college has resources to contribute to a solution, depend on the work of a network of affiliated organisations.

Through the College Affiliate Pattern, the college gets feedback on community needs from a variety of perspectives, and the efficiency in terms of finances is obvious. On the other hand, the danger of "establishment bias" does exist,

and the college must recognise that it forfeits some of its capacity to influence action.

L. Financing Patterns in Community Services

Although a community college has an obligation to commit an equitable proportion of its own financial resources to community services courses, it is unlikely that even the most affluent of these institutions will be able to provide enough money for the entire support of such courses. Probably the most effective pattern of finance is achieved by co-operation with other community agencies and groups.

Most academic programmes are more reliable and predictable in their revenues and expenditures than community services programmes which have a rather fluid nature. The general operating budget of a college will make provision for the salaries of professional and clerical staff as well as various office costs, but programming costs are less predictable and are largely self-supporting. A programme which is initiated and in operation within two weeks is fairly typical in community services and it is clear that such rapid planning often requires atypical financing.

There is great variation from state to state in the amount of tax support provided at state level for community services programmes and this fact obviously influences the type of courses and activities offered. In Michigan one finds a preponderance of credit offerings since there is at present no state tax support for non-credit courses in the community colleges. However, in California where a community services tax exists, it is possible for a community college district to levy a five cent tax override per \$100 of assessed real estate valuation to provide for community educational, cultural and recreational activities, and one finds a preponderance of non-credit offerings. The non-credit pattern is also found in Maryland and Florida, where state aid is provided on a clock hour basis. In Texas and Ohio support is also forthcoming from the state for non-credit community services courses but there are still many states which do not support such offerings.

Variations in the federal budget affect community services programmes more than others since this course is often used to fill financial gaps when local district or state authorities are unable or unwilling to provide tax support for a project or programme.

Participants in community services courses are generally charged very low tuition rates and in some cases major programming costs are borne by sponsoring groups or by state tax support. In many cases, courses and activities are organised on a "pay-as-you-go" basis with administrative and indirect costs absorbed by the general operating funds of the college. It is a fact, however, that financial considerations limit the willingness of most community colleges to enter "high risk" programmes of a non-remunerative nature.

In sum, then, the main categories of expenditures are professional and secretarial salaries, instructional salaries, travel, advertising, office and classroom supplies, printing, rentals, contracted services and capital outlay. The last item is limited mainly to California Community Colleges, where capital expenditures may be made from community services tax funds if the facilities are intended primarily for community use.

The major sources of revenue for community services are tuition fees, state aid, federal contracts, local tax funds, foundation grants, and community support.

M. Personnel Factors in Community Services

The term "community" has become a functional rather than a geographic concept and for this reason the leader of a community services team becomes the pace-setter and the initiator in what might be called the educational community. "Formal schooling" is not the context of the community services leader. His context is rather that of educational leadership in the community and his success depends on co-operative relationships with other educational leaders in the community and he must link the educational efforts of community services with community efforts in the social, economic, cultural and governmental spheres.

Having an intimate knowledge of the community and being in personal contact with the key people in the community are necessary credentials for leadership in this field. Person-to-person contacts are vital in assessing and identifying the power structure or "pulse" of the community and confrontations with these key people are essential. Community officials and political figures must be persuaded to be sympathetic and supportive of community services programmes, and community college involvement in community organisations and civic projects helps consolidate relationships at high levels.

The development of high standards in community services is also an important factor since it is the quality of a programme which determines its success. Identifying a community need is not the only criterion required in the initiation of a new course. An inevitable question will have to be asked: Can the course be handled effectively and will it be of a sufficiently high standard? "Real needs" in a community will have to be decided upon and the personnel of a community services section will have to avoid creating a facade of symbolic activities which do not help bring about needed changes in the community.

It would appear to be far too early in the history of community services programmes to attempt to draw precise boundaries around the type of community problems which may be addressed by these services. A fluid staff structure that permits rapid changes in staffing and programme format is desirable in order to achieve quick, effective response to programme requests and community problems. If community services courses become too secure and formalised then the focus often falls on administrative structure rather than on community problems and needs.

Risk-taking is an integral part of the lives of personnel in community services courses since a course or activity which is potentially controversial or which involves a new approach to a difficult community problem may be unsuccessful. The introduction of new courses involves breaking down the inertia or resistance to change which is frequently encountered

in a community and this aspect certainly presents a challenge to the hardest of leaders and workers.

N. Liaison with Community Groups

Community colleges exist in an inter-organisational environment, and this environment is the milieu of the community services organiser. Contacts throughout this environment are possibly more critical for community services than for any other area of the college, since the degree and type of contact determines the nature of community services courses. These contacts also determine the quality of interaction between the college and the community.

Most community colleges lack the resources to tackle all but the most superficial of community needs and they therefore act in co-operation with other community organisations and groups rather than unilaterally. The community colleges do not have the social licence to use their resources to play an extended rôle in an attack on community problems. Important community services such as short courses, seminars, concerts and so on, can legitimately be provided but community colleges cannot by themselves make an impact on major societal problems. This then is why a college's greatest strength lies in its ability to work co-operatively, through a community services division, with other community organisations and groups which can also provide human and physical resources. A community college's rôle is surely that of educator and it must focus its attention on the securing and distribution of available knowledge, on creating new knowledge and on assisting in the application of knowledge to community problems.

A community college is likely to co-operate closest with other educational agencies in the community: schools, vocational-technical centres, colleges and universities and libraries. Community services will be closely linked with adult education agencies and university extension services as well as organisations having secondary educational objectives such as YMCAs and YWCAs, churches, drama and art societies, business and industry, recreation groups, welfare agencies and so on.

In the process of entering into liaison with groups and agencies in the community, a community services division will inevitably have to take cognisance of other factors such as the maintenance of political neutrality, the use of citizen advisory groups and the surveying of community needs. In attempting to serve the entire community a college will also have to reach beyond the campus to identify needs and then serve those needs, for the community college is involved in the process of social improvement and it helps to provide the tools for social change.

In co-operative planning and programming between a college and other community groups the community services staff are acting as educational specialists and because of their political neutrality they can often serve well the function of bringing community groups together. Citizen advisory groups also act as college ties with the community and when organised into suitable fields of activity, they can act as a means of identifying needs in their areas of specialisation and help in planning courses that can use joint college and community resources.

Surveying community needs as they relate to community services is an important way of linking and entering into liaison with the community. A great deal of data on which educational decisions might be based is available in the community, in state, county and city offices, employment agencies, school district offices and other organisations. In addition to surveying needs, it is also helpful to survey resources in order to discover what is already being done in various areas of service. This will help to reveal gaps in community services and it will also indicate areas where co-operative efforts with other agencies might be undertaken.

O. Summary

The community college has always contained elements in its basic conceptions which represent the antithesis of educational elitism. The very nature of the community college philosophy includes a commitment to every citizen to expand post-high school educational opportunities to persons

at all socio-economic levels and to all segments of the population. (1)

This commitment has not always been fulfilled particularly in relation to the provision of appropriate courses for the poor or disadvantaged. Community colleges, and indeed all educational institutions, are perplexed and confused about their fundamental rôle with regard to race, poverty, and the inner city.

Community services divisions in community colleges are faced with the task of finding the appropriate balance between courses of an educational nature which are relatively risk free and which enhance the public relations efforts of the college, and courses which address the major social problems of our society.

There are some activities which are legitimately the concern of the community college and are educational e.g. concerts, lectures, short courses, conferences and so on. And yet, in this period of rapid change, community services courses have the potential to be much more than merely pleasant and stimulating experiences. In addition to providing opportunities for the affluent middle class to participate in educational, cultural and recreational experiences, community services must also commit itself to the difficult, unremunerative, and undramatic problems of the lower socio-economic groups in the community.

The very nature of community services necessarily includes functions which are constantly changing and expanding and for this reason there is a resistance to classification and tight definition. There are educational vacuums in every community and the community services offerings must attract students in order to get to the crucial

(1) This philosophy calls to mind the stress which Mrs. Thatcher has laid on the need to provide regional advanced further educational facilities in England and Wales on as equitable a basis of geographical distribution as possible. (See White Paper of December 1972, and Circular 7/73)

sources of social ills and fill the educational voids. This task is clearly not the exclusive obligation of the community college but for obvious reasons this institution is well equipped to perform this task.

The proper rôle of the community college in relation to community development activities should always remain an educational one. By providing a centre for analysing community problems, developing the leadership potential of citizens, providing a forum for discussion of local issues and making available to the community the expertise of teaching staff, the college can play an important integrative rôle.

Although the term "community services" is by no means unique to the community college since hospitals, churches and dog pounds all provide community "services", when it comes to defining a programming area then this term is exclusive to these colleges. The term used by community colleges should be clearly distinguished from the "continuing education" programmes offered by most four-year colleges and universities, or the "adult education" courses provided by a high school district or local authority.

The nature and scope of the programmes which have been described can only really be communicated by the term "community services". These include speakers bureaus, art galleries, services to ghetto youth, consultive services by staff members to community groups, summer recreation programmes for youth, community use of college facilities, community groups, summer recreation programmes for youth, community studies and many others. These services have a broad range of clientele - youth as well as adults, full-time, part-time students and non-students, organisations and business enterprises as well as individuals.

During the 1970s the community college will play an increasingly dominant rôle in community life and will offer a broader range of educational services. As the traditions of an agrarian society continue to give way to the demands of our present-day industrial society, more attention will

be given to urban problems. The specialised nature of services and activities in modern society will require more intensive efforts in co-operative planning and the community college will become a partner with local government, citizen groups, business and industry and senior colleges and universities in utilising and generating knowledge about the challenges faced by the community. In this partnership the community college will increasingly become an educational centre for the community and its essential rôle will be one of educational support in community study, planning and action.

2. CO-OPERATIVE WORK STUDY (1)

A. Definition

The basic principle of co-operative education is that optimum individual development is best achieved by an educational method which combines classroom learning with periodic intervals of planned and supervised practical experience away from the academic community.

Practical experience in co-operative education is usually in the form of paid employment in industrial, business, government, or service-type situations. This means that supervised employment in the occupational field for which the student is preparing enhances vocational adaptation and comprehensive learning. In addition to the usual lectures and laboratory exercises, the co-operative plan provides learning situations in the work world which enable the student to become better acquainted with both theory and practice.

The co-operative plan, with its process of integrating traditional study and practical experience, promotes better preparation for life because it provides students with meaningful interaction with the total environment and also

(1) This concept is very similar to the "sandwich" courses offered at polytechnics in the United Kingdom and at colleges for advanced technical education in South Africa. It is, in fact, a variation on the same theme.

gives reality and relevance to education. This system of education can be considered as a process of reinforced learning to develop the "whole man", because it bridges the gap between academic learning and what a student needs to know to become productive in a creative, practical sense.

B. Historical Development

Co-operative education first started in the United States at the University of Cincinnati in 1906 through the efforts of a member of the engineering department named Herman Schneider. Initially this system of education was a programme for the education of engineers in which students alternated equal periods between lecture instruction (theory) and industrial, business, or governmental employment (practice) under the direct supervision of the engineering college. It was called the "Co-operative Plan of Education", because it required the co-operation of both educators and employers to form a comprehensive educational programme.

The co-operative plan evolved from two basic observations about education made by Professor Schneider from his own practical teaching and engineering experience:

(i) Classroom education can never hope to teach all the elements of knowledge required for a successful career in any profession. Practical on-the-job experience with successful professionals in the field is a necessary supplement to classroom instruction.

(ii) Since the high cost of education is a paramount problem in the United States, most students must work part-time while attending classes in order to earn a portion of the cost of their college education. With very few exceptions, these part-time jobs are not related to their career objectives and have little transfer value to the educational programme of the students.

Shortly after its successful inception at the University of Cincinnati a number of educational institutions adopted the co-operative plan of education: Northeastern University, Boston, Massachusetts, the largest co-operative education institution in the United States (1909);

University of Detroit, Detroit, Michigan (1911); Georgia Institute of Technology, Atlanta, Georgia (1912); University of Akron, Akron, Ohio (1914); Drexel Institute of Technology, Philadelphia, Pennsylvania (1919); Massachusetts Institute of Technology, Cambridge, Massachusetts (1919); Antioch College, Yellow Springs, Ohio, the first Liberal Arts College to adopt the co-operative plan (1921); and Cleveland State University, formerly Fenn College (1923).

According to Stewart B. Collins the co-operative education movement in the United States can be divided into three distinct periods of growth. (1)

1906 - 1942	20 institutions in 36 years
1943 - 1962	50 " " 20 "
1963 - 1970	108 " " 8 "

The first period produced a moderate but steady increase in the number of co-operative institutions and even the depression years of the early 1930s failed to halt the rising growth of participating educational institutions.

During the second period many institutions were forced to temporarily suspend their co-operative programmes in favour of emergency acceleration of conventional academic programmes. Despite this fact there was a more rapid increase in institutions offering co-operative plans. This was mainly due to an increasing number of two-year institutions offering non-degree programmes in various technical and business fields using the co-operative plan. In addition, the co-operative plan was finding increasing favour in more junior and community colleges which were offering either transfer or other associate degree courses.

The impetus for the third stage of growth was provided by the establishment of the National Commission for Co-operative Education in 1963. Because of the efforts of

(1) Collins, Stewart B. - Philosophy and Operation of Co-operative Education: A Directory of Participating Colleges in the United States and Canada Co-operative Education Association, Drexel University, Philadelphia, Pennsylvania, 1970. (See "Introduction")

this non-profit organisation to promote the expansion of co-operative education throughout the United States, the number of participating institutions almost doubled between 1963 and 1968.

The co-operative education movement has been greatly expanded and aided by other institutions, foundations and centres which have provided either consulting assistance or financial support to educational institutions interested in exploring, establishing, or increasing co-operative education programmes. These include: the Centre for Co-operative Education at Northeastern University established in 1965; the Ford Foundation's Fund for Advancement of Education; the United States Office of Education, Bureau of Higher Education, Division of College Support; the Co-operative Education Association and the Co-operative Education Division of the American Society of Engineering Education; and the recently established centres for regional co-operative education at the University of South Florida (1969), Virginia Polytechnic Institute (1969), and the University of Detroit (1969).

C. Present Status

In this age of automation and technological and scientific innovation, some form of tertiary education is a necessity for sound employment. The complexities of modern business and industry make it very difficult for the student to visualise his vocational rôle in life. The co-operative plan provides more opportunity for students to gain an understanding of the world of work than any other type of education and present indications are that this approach will continue to play an important part in the expansion of tertiary education in the United States.

Co-operative education is making an impact during the 1970s because it is providing solutions to some of the problems experienced by socially and economically underprivileged groups in the United States. In a recent pamphlet, Wooldridge commented:

"Institutions with co-operative education programmes introduce a number of social and economic values into the

communities in which they are located. From the community's point of view, this produces significant returns on a number of levels: (1) it begins to introduce cultural nourishment in the culturally deprived segment of the population; (2) it upgrades the training and skills of future adults who would otherwise have limited capacities as employees and wage earners; (3) it also lessens the sense of isolation of culturally deprived families from the mainstream of community life." (1)

Co-operative education offers a wide range of potential programmes at all levels of tertiary education and in virtually all professional fields of specialisation. These include: engineering and technology, business administration, education, arts and sciences, law, physical therapy, pharmacy, nursing, medical technology, architecture, advertising design, industrial design, home economics and community planning. This means that both specialised job opportunities in almost all professional fields as well as career orientation and development are provided by this type of approach. The scope of co-operative education also extends to post-graduate co-operative programmes in various professional fields in six institutions in the United States.

In a recent essay by Sir Eric Ashby on American higher education, this eminent academician made a statement which strongly supports the concept of co-operative work study:

"American society might make better use of its colleges and universities over the next 30 years if it could extricate itself from the assumption that full-time education should be digested all in one gulp, from age 5 to age 22.... This formidable bottleneck in the age group receiving higher education might be relieved, by sustained propaganda - that college is never 'over' and the time to go is when one knows why one wants to go.... The difficulties are obvious. A man of 30 is likely to be married and have children, and a

(1) Wooldridge, R.L. - "Co-operative Education and the Community Colleges in New Jersey" A Supplementary Report Prepared for the Governor's Committee on New Jersey Higher Education, published by the National Commission for Co-operative Education, N.Y., N.Y., 1966. (p. 8)

job which he cannot afford to leave. One way to meet these difficulties is the sandwich plan, very common in British technological education, where the student spends (say) six months in college and six months on the job. This would require a nationwide co-operation from employers, but - looking ahead two or three decades - I think this change of life-pattern would be amply justified by its social benefits. Re-education will in any case become indispensable. The sandwich solution has other merits. It would enable the student who is concerned with social issues and impatient of 'irrelevant' curricula, who wants to be where the action is, to spend half his year satisfying these needs rather than griping about them on the campus; and the other half of his year equipping himself to serve society better." (1)

D. Operation of the Co-operative Plan

A full-time job is obtained by the co-operative institution in an industrial concern, business firm, government agency, or some other type of organisation. This work is usually shared by a "pair of students" or "two-man team" on an alternating basis (while one student is working on the job, his partner is attending lectures). At the end of a specified period the students change places. This permits the co-operative assignment to be covered throughout the year by a pair of students.

Although most co-operative institutions employ the "two-man team" system, this procedure is not a fundamental principle of the co-operative plan. The essential feature is not the pairing of students but the alternation between regularly scheduled periods of off-campus employment and regularly scheduled periods of lecture tuition. This pattern of alternation means that students do not have to serve two masters (work and study) at the same time.

(1) Ashby, E. - Any Person, Any Study New York: McGraw-Hill Book Company, 1971. (pp. 99-100) (First of a Series of Essays Sponsored by The Carnegie Commission on Higher Education)

A second pattern of work experience education is organised so that the student's work experience is concurrent or parallel with enrolment in a lecture course. Normally, the student would spend approximately one half-day attending lectures and the other half-day in the working situation in business or industry. The hours of work may be planned for morning, afternoon or evening and may vary from 15 to 40 hours per week. The lecture load would vary accordingly.

On the half-time arrangement the employer may continuously cover one full-time job with two half-time students; or he may employ part-time co-operative students on a schedule that meets the normal needs of business. This pattern has certain advantages. Students enjoy an uninterrupted programme of study while they maintain their academic, social, and student body relationships. The information gained in class and at work can be immediately interrelated and mutually supportive.

Most of the degree-granting co-operative institutions operate on a five year plan to ensure the required number of academic credits necessary for degree-granting privileges and accreditation. The first year is devoted to full-time study. This provides the staff co-ordinators, who are responsible for the operation and supervision of the co-operative programme, enough time to assess the students' ability to do academic work and also provides time for an effective orientation course as well as preliminary screening of the students' interests, needs, and qualifications for co-operative placement.

Co-operative institutions differ in their requirements since they either offer a mandatory or an optional programme. In some institutions every student must participate in the co-operative programme; while other institutions allow students to choose the co-operative plan as an alternative to the conventional academic programme. In the latter situation, it is customary to exercise a selection or screening process relative to student eligibility requirements.

The co-operative plan may also be on a contractual basis between employers and the educational institution. This usually results in a highly selective programme wherein the student must not only meet high academic requirements but must also be selected by one of the participating companies, after a series of personal interviews.

E. Advantages of Co-operative Education

According to a national study (1) completed in 1960 under the leadership of Dr. Ralph Tyler and financed by the Ford Foundation's Fund for the Advancement of Education, the advantages of co-operative education may be summarised as follows:

Advantages to Students

Gives reality to learning; increases educational motivation; develops greater human understanding; accelerates maturation; provides orientation to the world of work; provides financial aid; provides useful employment contacts.

Advantages to Employers

Provides a good source of labour supply; facilitates recruitment and retention; permits better utilisation of personnel.

Advantages to Educational Institutions

Permits more effective use of buildings and facilities; encourages greater community support; provides benefits to the academic staff.

The proliferation of co-operative education in almost all professional fields today, as well as its implementation into all levels of tertiary educational programmes, certainly reflects the acceptance by more and more educators of the advantages of the co-operative plan. "In fact, the consensus amongst most practitioners and other knowledgeable people in the field agree that co-operative education is 'viable

(1) The complete findings of this study are contained in: Wilson, J.W. and Lyons, E.H. - Work-Study College Programmes: Appraisal and Report of the Study of Co-operative Education New York: Harper and Brothers, 1961. (240 pp.)

intellectually, administratively, economically, and, above all, represents a sound alternative to traditional forms of education programmes'." (1)

F. Co-operative Education and the Community College

According to B. Lamar Johnson (leader of the Junior College Leadership Programme, University of California, Los Angeles) co-operative education is one of the most valuable community college innovations. After an 18-month tour of junior and community colleges in 22 states, Johnson observed:

"Co-operative Work Study Education is assuming a rôle of increasing importance in junior colleges of our nation. This plan is particularly appropriate for the community college. In addition to helping students achieve occupational competence, an important goal of the two-year college, it re-emphasises the use of community personnel and facilities in programme planning and operation. In addition, the income students receive from employment makes it possible for many of them to attend college." (2)

While community colleges only account for about 20 of the 130 co-operative programmes in the United States, much of this growth has occurred during the past ten years. A brief review of four such colleges with co-operative programmes will provide some insight into the expanding campus and education programmes possible in community and junior colleges:

Mohawk Valley Community College, Utica, New York, has one of the oldest community college co-operative programmes dating back to 1949. Mohawk provides for a two-year programme with six academic quarters and two work-quarters. A co-operative programme is a degree requirement for the Associate in Applied Science in advertising design and

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- (1) Seaverns, C.F. - A Manual for Co-ordinators of Co-operative Education Boston: Centre for Co-operative Education, Northeastern University, May 1970. (p. 13)
- (2) Johnson, B.L. - Islands of Innovation Expanding: Changes in the Community College Beverly Hills, California: Glencoe Press, 1969. (pp. 69-70)

production, banking, insurance and real estate, electrical technology, mechanical technology, and retail business management.

Borough of Manhattan Community College grants two academic credits for each of three semester work-terms provided in its seven-semester programme which includes four semesters in the classroom. These work periods - called co-operative education internships by Manhattan - are provided for students in many fields, such as accounting, advertising, banking, data processing, marketing, real estate, and traffic and shipping.

College of San Mateo, San Mateo, California, a recent starter in co-operative education, provides a programme in which a student may elect to participate in such fields as business, education, health services, technology and liberal arts. As at Manhattan, the programme provides for three or four work-semesters and four or five semesters in the classroom. Academic credit is granted for the work experience, the number of credits depending on the curriculum in which the student is enrolled.

Miami-Dade Junior College, Miami, Florida, is also a relative newcomer in the co-operative ranks. Initiated in 1969, Miami-Dade now has more than sixty students in co-operative assignments in the Miami and South Florida areas in a variety of training positions. Students in both career as well as college parallel areas are enrolled in the co-operative programme. Graduates may move on to state universities to complete their baccalaureate degrees by agreement with state institutions which have co-operative programmes in the student's major field and continue their co-operative training with their Miami-Dade employer. Miami-Dade's two-year programme provides for two trimesters of off-campus experience and four trimesters of classroom studies.

3. TECHNOLOGICAL DEVELOPMENTS AND METHODOLOGY

Science and technology are placing at our disposal aids to learning that were unknown and even undreamed of a generation ago. In the following section, one of the most

notable of these, namely, television, has been considered. The place and use of television in education is much discussed and convincing claims have been made that television can extend education and improve learning. For this reason a brief examination has been made of some examples of the application of open and closed circuit television in selected institutions.

Various additional and emerging developments such as video tapes, programmed instruction, a systems approach, and audio-tutorial instruction, have also been described since they are playing important rôles in education and the experimental work done in these fields in the United States could be of value to other countries which are less-sophisticated and eager to improve their learning facilities.

A. Television Teaching

In a recent report the Carnegie Commission on Higher Education referred to instructional technology in tertiary education as the "Fourth Revolution". Although many technologies are emerging the Commission suggests that the greatest prospects for instruction lie with cable TV, video-cassettes, computer-assisted instruction, and learning kits to be used with audio-visual independent study units.

That television is destined to occupy an important place in education is reasonably certain but its present place in American education is not secure. In a report, compiled in the mid-1960s for the Fund for the Advancement of Education, on the rôle of television in instruction, Murphy and Gross state:

"Many of the schools and colleges that early adopted television are still using it, and there have been a steady accretion of new users. But even in considering sheer volume, it is apparent that something, or a number of things, went wrong with it. It is significant that by and large, the really innovating schools are doing little with television." (1)

(1) Murphy, J. and Gross, R. - Learning by Television
New York: The Fund for the Advancement of Education,
1966. (p. 41)

The same authors also quote Jack McBride's well-known remark: "If something happened tomorrow to wipe out all instructional TV, American schools and colleges would hardly know it was gone.... TV is still far from the point of playing an integral rôle in education. We're still peripheral." (1)

In this somber assessment by Murphy and Gross of the outpouring by the Ford Foundation of a \$100 million on a variety of educational television (ETV) projects, there was one service which was singled out for special praise i.e. Chicago's TV College. This college programme was described as a highly successful experiment and revealed that "to the extent permitted by available measures that television has regularly matched and often surpassed the effectiveness of conventional classroom teaching". (2)

(a) Chicago TV College (3)

In the field of open circuit television TV College is a unique institution having functioned continuously since 1955 and providing a service to the seven million people within its signal area. Students are not encouraged to take all of their courses via television, but in some situations (as may occur with inmates of penal institutions, mothers with small children, and physically handicapped people) students are permitted to take all courses required for the Associate in Arts degree by television. (4)

From its inception, TV College has concerned itself with two aspects of programme development: (i) providing

(1 & 2) Ibid. - (p. 43 and p. 58)

(3) The eight institutions making up the City Colleges of Chicago are community colleges and include one campus which is really a television studio. It is appropriately known as TV College, a service of the Learning Resources Laboratory of the City Colleges of Chicago.

(4) Between 1956 and 1971 about 350 students were awarded the Associate in Arts degree (60 hours of college work of "C" or better average) entirely by TV.

a degree of personalisation in television instruction and (ii) subjecting instruction by television to rigorous evaluation.

In an attempt to personalise instruction, postal assignments or projects are used. Teaching staff assess such work and send students their criticisms and suggestions. Television students also come to the TV College campus for conferences with instructors and for examinations. In addition, instructors hold regularly planned "telephone office hours" for consultation with their students. Students are encouraged to write to their television instructors since this communication aids instructors to become aware of the individual interests and concerns of students and provides an opportunity for supplementing information and insights presented on television.

In selected science courses taught by television a plan is provided which allows students to use "on-campus" laboratories on Friday evenings and Saturday afternoons. On occasion, laboratory equipment has also been made available at the Joliet State Prison for use by TV College students.

(b) Selected Examples of Community Antenna Television (CATV) and Conventional Television

Vincennes University in Indiana (an institution organised in the style of a community college and awarding associate degrees) has been a pioneer in the field of cable TV. (1) In 1961 this university acquired the equipment of a commercial UHF television station in a nearby community. A consulting firm reported that if a commercial UHF station was run by the university it would result in considerable annual financial loss. However, the report did add that the surrounding community would probably respond to a community antenna (cable) television service, and that the income from such a service would eventually support educational television.

(1) CATV involves the erection of an antenna which picks signals out of the air from a conventional TV transmitting station and then transmits them along a cable.

Vincennes went ahead with CATV plans and after constructing towers and building the cable systems they started operating in April 1964, as Station WVUT. During the first few years this venture was difficult to finance but by 1972 the system served 7,000 customers who pay only \$5.05 per month for ten different channels and a weather and temperature channel. A main objective of the CATV system was of course to secure funds to support educational television. At present Station WVUT operates at least five hours per day and is also a part of the Indiana Higher Education Television System which joins all state colleges with ETV.

A recent grant from the United States Department of Health, Education and Welfare (HEW) will provide funds for correcting faults and bringing the standard of broadcasting up to the commercial level. Another purpose of this station is to serve the local elementary and secondary schools in some way. For a time regular classroom work was broadcast several hours a day for the Southwest Indiana Educational Television Council. However, negotiations are at present underway to provide supplementary or enrichment programmes for the schools rather than the regular classroom presentations.

The HEW grant will enable Station WVUT, supported by Full V.U.-Cable System, to effectively serve an area 120 miles wide with a population of 250,000 people.

The Federal Communications Commission has ruled that as from March 31, 1972, at least one channel of all CATV systems must be made available for education and community service. However, this ruling constitutes no problem since broad band cables give the CATV operator more channels than he can possibly use. Real opportunities are now available for universities and colleges of all sorts to develop television programmes although they may have to co-operate to meet the need and reduce the expense.

In Orange County, California a new educational television station started its first broadcast in November 1972. This station is known as Coast Communiversit'y's

television component, KOCE-TV and is operated by Coast Community College District which serves about 51,000 students on two campuses at Orange Coast, Costa Mesa, and Golden West, Huntington Beach. The term "communiversity" combines the words "university" and "community" and indicates objectives which include offering a wide segment of the population a chance to study by means of television. Television will now be an important communications and study resource for the 1.5 million people of Orange County, who, up to now, have never had a local station.

Many components of the emerging Coast Communiversity are patterned after the Open University in England and Norman Watson, chancellor of the Coast District, spent three months in the spring of 1972 in England, planning and observing Open University operation. Public Cable Television Authority has created a joint powers agreement for the five cities of the college district (Newport Beach, Huntington Beach, Costa Mesa, Fountain Valley, and Westminster) enabling them jointly to develop a cable television network to produce superior programming. These five cities contain an estimated population of 400,000.

The venture in Orange County is the first of its kind in the United States and together with the 3,000 cablevision stations throughout the nation offers educators a new medium by which to deliver televised educational materials in years to come. The Communiversity offers a way of taking higher learning to the community instead of requiring that all students come to the college campus. It opens the way for a vast potential of students who might not otherwise ever hope to attend college. The Communiversity makes college study available to working people, older residents, the confined, the handicapped, housewives, and mothers unable to leave home because of family responsibilities. It is an effort at matching education's art with the art of technology. Televised programming, correspondence materials, individual tutoring, study-centre-based activity and counselling will be the stuff of the Communiversity. By combining cables, cassettes, correspondence, computers, classrooms and

comprehension centres, the Communiversity is rapidly developing.

Miami-Dade Junior College, Miami, Florida, launched its own TV College during 1972 with a series of thirty half-hour documentaries on "Man and Environment" spread over two semesters and offering two three-credit courses. The programme is but one element in the Television Learning System which contains four parts: (i) Television - in addition to the half-hour documentary each week, there is a half-hour "TV Forum", featuring panelists who update and localise the topic dealt with in the documentary. (ii) Open Mike Radio Hotline - this is an open circuit radio programme which immediately follows the "TV Forum" and provides viewers and/or listeners - students and non-students alike - with a chance to ask questions about the topic of the week. (iii) Printed Materials - a textbook entitled "Man and Environment", and a "Study Guide" are geared to the television programmes. The textbook is modular in format and topics are identical with those in the TV programmes. The study guide is divided into fifteen modules per semester. It contains instruction for using the various components of the system as well as additional diagrams, illustrations and supplementary readings. (iv) RSVP - these letters stand for response system with variable prescriptions, which, being translated, means a computerised system for grading tests, making individual assessments of performance, and providing individual prescriptions.

"Man and Environment" was designed as a general education course, adisciplinary in approach, modular in format, for showing on either open or closed circuit television and has been distributed widely over at least a dozen states.

The Northern Virginia Educational Television Association (NVETA) was formed as a part of a Virginia plan to cover the state with a system of five educational television stations.

After its move to the Northern Virginia Community College Campus in February 1970, the NVETA combined with the college to form station WNVT/Channel 53. This station began

broadcasting in March 1972, and is a non-commercial educational television station. Financing of the operation of this independent, non-profit station comes from two main sources: the local public schools which are served and the station's national production contracts. WNVTV broadcasts to all public schools in the eight Virginia suburbs of Washington, D.C. Each of these school districts subscribe to WNVTV services on a per capita basis and these funds are matched by the state.

In September 1972, WNVTV began its planned seven-day, 84 hours-a-week broadcast service, adding public/cultural affairs, continuing education and other programmes. The television station benefits from being located on the college campus since their offices and studios are within an educational environment. Realising that there is a critical shortage of qualified technicians and engineers in the field of television, Northern Virginia Community College recently became the first public institution in the Eastern United States to offer a programme to train them. The curriculum is offered through the co-operation of WNVTV/Channel 53 and the Annandale Campus of the college, just outside Washington, D.C.

(c) Closed Circuit Television and Video Tapes

Few examples of teaching courses using closed circuit television are present in community colleges. At the College of San Mateo, California, closed circuit television is provided to 130 classrooms and laboratories. This facility is primarily used to transmit instructional television lessons and motion pictures to classrooms. Instructors order motion pictures from the audio-visual department, which delivers films to the television studio for transmission to classrooms. Under this plan, multiple classes can simultaneously view the film. In addition, instructors are saved the inconvenience of securing and operating the motion picture projectors in their classrooms.

Pensacola Junior College in Florida has for some time used closed circuit television in teaching general biology, English composition, general psychology, and American history.

All presentations are made to class groups (ranging from 50 to 300 and averaging 200) via taped closed circuit television. The advantages of teaching by this method which were reported at Pensacola include: (i) Many materials can be presented via television that cannot be presented in lecture sessions - field trips and large-sized scientific experiments, for example. (ii) Instructors prepare materials more carefully for presentation on television than for typical class lectures - leading to meticulous preparation for television classes. (iii) Instructors can see themselves as others see them - a notable aid to the improvement of instruction.

At Pensacola, instruction by closed circuit television was initiated for the purpose of developing plans and materials for later use on the college educational television station opened in 1967. However, instruction by closed circuit television was so successful that the college continued to expand instruction by this medium.

Although few community colleges use closed circuit television as a major medium for teaching, a number employ it in occasional class periods in different courses. For example, at Cerritos College in California, a camera and two monitors are used in physics classes to telecast images of radio-active materials and to present demonstrations which can be seen by entire classes. Another example can be seen at Bronx Community College in New York where students in nursing get hospital experience at Bronx Community Hospital. Fixed television cameras are located in eight hospital rooms and are connected with two monitors at which the supervising instructor is seated. One monitor changes automatically every twelve seconds, so that every student is seen frequently; the other is manually operated so that the instructor can change or "hold" as long as may be desired. Each student nurse has a transistor hearing aid, with an earphone, by means of which she can receive comments or instructions from the supervisor. The student can also talk to the instructor by means of a microphone in the wall of each room.

An essentially similar plan, though on a larger scale, is in operation at Monroe Community College also in New York. An entire floor (33 rooms) of Northside Hospital, Rochester, where students in nursing at Monroe do their hospital work, is equipped with closed circuit television.

It is likely that community college use of closed circuit television will increase - though seldom is it likely to become the medium for teaching entire courses.

Project Insight at the Community College of Philadelphia was conceived as an effort to explore the medium of video tape as a means of sharing and understanding what is done in classrooms. The video tape of a teacher-in-the-classroom maximises the opportunity for personal growth by allowing the instructors to see exactly what they do in the classroom. It also enables them to elicit responses from colleagues and the viewing of the tape makes each teacher feel that he or she is carrying out the task in an atmosphere which is concerned with self-improvement.

The intention behind Project Insight was not to examine different approaches to teaching in order to find out which was the most effective. The primary goal was the fostering of individual growth by making teachers conscious of what they do inside the classroom and by sharing those experiences. One conclusion reached in this project was that a video tape of a class can be a much more effective training device than any abstract description of what ought to be.

The quality of video tape recorders is improving and their cost declining. These facts added to the flexibility of such recorders and their adaptability to many teaching situations is resulting in great expansion in their use. Video tape recorders make it possible for viewers to see and hear themselves "in action", thus providing an opportunity for feedback (immediate, if desired) as an aid to accelerating and improving the quality of learning.

B. Programmed Instruction

Some of the essential characteristics of programmed instruction could be identified in the following way: a reproducible programme of teaching in which students have, and know they have, specific tasks (learnings) to perform, and by means of which they know what they have achieved or failed to achieve.

Perceptions regarding programmed learning have changed during the last fifteen years among leaders in the field. In a paper published in 1960, Lumsdaine reflected the points of view of Pressey, Skinner, and other pioneers in the field, as well as his own, when he described three, then commonly accepted, crucial characteristics of programmed instruction:

"First, continuous active student response is required, providing explicit practice of each step of what is to be learned.

Second, a basis is required for informing the student with minimal delay whether each response he makes is correct, leading him directly or indirectly to correction of his errors.

Third, the student proceeds on an individual basis at his own rate - faster students romping through an instructional sequence very rapidly, slower students being tutored as slowly as necessary, with indefinite patience to meet their needs." (1)

This statement concerning programmes taught by teaching machines emphasises three main characteristics: (i) an active response, (ii) an immediate knowledge of results, and (iii) self-pacing. More recent authorities in programmed instruction have moved towards a broader interpretation which features replicability and planned sequences of instructional

(1) Lumsdaine, A.A. - "Teaching Machines: An Introductory Over-view" in Lumsdaine, A.A. and Glaser, R. (eds.) - Teaching Machines and Programmed Learning, A Source Book Washington: National Education Association, Department of Audio-Visual Instruction, 1960. (p. 6)

events designed to reproduce measurable and consistent efforts on the behaviour of each participating student. A more inclusive approach has become the vogue and it is now generally accepted that an instructional programme is a vehicle which generates an essentially reproducible sequence of instructional events and accepts responsibility for effectively bringing about a specified change from a given range of initial competencies or behavioural tendencies. Self-pacing is now omitted as a requirement and programmed instruction can be conducted in groups and can use a number of instructional procedures and media provided that: (i) there is replicability, (ii) there are defined sequences of instructional events, and (iii) there are consistent and measurable effects on student behaviour.

The systems approach to teaching (which is discussed in the next main section) is consistent with the principles and practices of programmed instruction. Audio-tutorial instruction (considered in the next main section as an example of "systems approach"), could also have been included in this section as an example of programmed instruction, especially under currently acceptable definitions.

The need for defining specific instructional objectives as a basis for improving instruction is recognised as sine qua non in programmed instruction, the systems approach to instruction, in audio-tutorial instruction and in teaching by television.

During the initial stages of programmed instruction teaching machines were largely used, but they are currently seldom used except in experimental situations in which carefully controlled research is being conducted. Published programmed texts have proved to be more economical and convenient and are now preferred to teaching machines in schools and colleges. However, there are many types of printed programmes which are used with such learning aids as tape recorders, overhead projectors, films and slides.

The advent of programmed learning caused undeniable ferment in American education and this inevitably affected

the community colleges too. A large number of these institutions make some use of this type of learning but few community colleges have institution-wide emphasis on it. Much of the use made of this concept in community colleges conforms to earlier definitions of programmed instruction. Many of the programmes provide for an active response, immediate knowledge of results, self-pacing and they also largely limit instruction to that which is provided through the use of programmed texts. Programmes are also available which do not conform to earlier definitions, which use group instruction, and which are not, for example, self-pacing.

(a) Selected Examples of Programmed Instruction

At Mesa College, San Diego Junior College District, California, an experiment was conducted in using a programmed text for teaching review English. An experimental group of 58 students was taught by an individualised programmed method. On the basis of scores on English screening tests, a matched control class of 58 students was taught by the group method ordinarily used in the course. When achievement tests were given at the close of the course, the group taught by the programmed method scored significantly higher (at the .01 level) than the control group.

At Harrisburg Area Community College, Pennsylvania, a plan of programmed instruction is used by means of which a "master teacher" can concurrently instruct two or more classes in shorthand and typing with the assistance of teaching technicians, audio-tapes, transparencies, and tachistoscope slides. The master teacher introduces new theoretical materials in shorthand, for example, while most of the other instructional material is provided by means of audio-recorded explanations, transparencies, slides, and varied-rate tapes for dictation. Technicians are available to give individual assistance at any time. In addition, all homework assignments have been recorded on tapes at varying speeds for student use at their convenience. This plan, and a basically similar one used in teaching typewriting, requires meticulous care in defining objectives,

in planning teaching activities, and in evaluating student achievement.

In the elementary physics course at the University of Toledo Community and Technical College, Ohio, programmes have been developed for demonstration-instructional use in laboratories. Laboratory demonstration experiments for an entire semester are photographed and presented automatically by slides synchronised with cartridge loaded audio-tapes. Since 25 different experiments can be viewed concurrently in the same laboratory this is clearly an important step towards individualised instruction.

At Foothill College, near San Jose, California, classes of 125 students in remedial mathematics are taught through the use of a programmed text written by two instructors at the college. This plan was adopted after studies showed that the achievement of students in large classes taught by this method is as high as that in classes of conventional size taught by usual methods - and the dropout rate is notably lower.

The preceding reports of applications of programmed materials are representative of a notably increasing practice in community colleges. Such individualised instruction is particularly important for the community colleges, most of which are open door institutions with a heterogeneous student population.

The full impact of programmed instruction is only now being felt in community colleges and some of the developments in this field may well point to a time when it will be basic and central to a major part of the teaching done in these institutions.

C. Systems Approach and Audio-Tutorial Teaching

(a) Systems Approach

A systems approach to operations is a plan in which each of a group of components or subsystems performs specific functions or tasks that recognisably contribute to an end product of predictable outcome. A systems approach requires

the definition of specific objectives, or desired outputs, and the provision of means for achieving these outcomes, as well as evaluation and systematic feedback for use as a basis for improvement.

Since education is in fact a series of complex systems (individual schools and colleges within a city or state, each of which is itself a system with multiple subsystems such as departments, courses and curricula), it would appear reasonable that the systems approach should be used in education. This has occasionally been done.

When applied in schools, colleges or universities, systems analysis begins with a clarification of the desired changes in student behaviour - including understanding, knowledge, skills, appreciations and habits. Once outcomes have been defined, there follows a series of pre-tests, evaluations of achievement, teaching-learning experiences and revisions of procedures. In noting the importance of identifying outcomes Goodlad looks to the future and states: "The most controversial issues of the twenty-first century will pertain to the ends and means of modifying human behaviour and, most of all, to who shall determine those ends and means. The first educational question will not be, 'What knowledge is of most worth?' but 'What kinds of human beings do we wish to produce?'. The possibilities virtually defy our imagination." (1)

The application of the systems approach to education is epitomised by rigorously applied and repetitiously used cycles of teaching-evaluation-revision. Mager and Beach point out that systematic course development is not really different from systematic development of an airplane, or systematic design and construction of a building. They state that the tools are different but the procedure is the same and continue:

"Essentially, the three phases of the procedure ask us

(1) Goodlad, J.I. - The Future of Learning and Teaching
Washington, D.C.: National Education Association, 1968.
(p. 22)

to:

1. Determine and describe what it is we want to achieve,
2. Do what is necessary to achieve the desired results, and
3. Check to see that we have succeeded in what we set out to do.

In developing instruction, this means:

1. Deriving and describing the objectives in meaningful form,
2. Developing lessons and materials designed to meet these objectives and trying out the course, and
3. Determining how well the objectives were achieved and improving the course to improve the results." (1)

(b) Instructional Objectives

According to Skinner: "The first step in designing instruction is to define terminal behaviour." (2) In any type of teaching, decisions regarding what students are expected to learn are important and are basically essential to effective curriculum development. The defining of specific instructional objectives and making them known to students is possibly the single most important contribution which an institution and a college or university teacher can make to the learning of many students. Amongst other things the definition of specific instructional objectives provides (i) a basis for identifying gaps and duplications in curriculum content; (ii) valid directions for guiding student learning; (iii) a basis for selecting and appraising instructional media and procedures; and (iv) a basis for describing student achievement and assigning grades that are directly relevant to desired outcomes.

Objectives must be stated more specifically than goals (merely generalised statements) if they are to affect instruction. Cohen describes an objective as "a specific

(1) Mager, R.F. and Beach, K.M. - Developing Vocational Instruction Palo Alto: Fearon Publishers, 1967. (p. 2)

(2) Skinner, B.F. - The Technology of Teaching New York: Appleton-Century-Crofts, 1968. (p. 199)

observable action or product of student action". (1) For this reason it must first prescribe a specific act the student is to perform; second, it must state the condition surrounding his performance of the act; and third, it must stipulate the degree of accuracy with which the prescribed act will be performed. Instructional objectives should not necessarily be limited to those which can be tested in the classroom. Behaviours outside the lecture and tutorial rooms and away from the college or university are of great significance.

In an increasing number of community colleges members of the academic teaching staff are attempting to define instructional objectives as a basis for both curriculum development and the improvement of instruction. An example of how behavioural objectives are used as a basis for planning instruction is found in the objectives formulated in a nursing course at Henry Ford Community College, Michigan, under the title "Preparation and Administration of Parenteral Medications":

"Given a syringe and a needle, you will be able to identify the parts which must be kept free from contamination. Given a medication card specifying the amount and route of a medication, you will be able to prepare an injection from a multiple dose within 5 minutes, including (a) keeping essential parts free from contamination, (b) dispersing air bubbles, (c) measuring correct dosage."

(c) Audio-Tutorial Teaching

Pioneered in a freshman botany course by Professor Samuel Postlethwait at Purdue University, audio-tutorial teaching has rapidly become a much-discussed development. It was first used in a community college in the Junior College District of St. Louis in a botany course beginning in 1963-64

(1) Cohen, A.M. - "Defining Instructional Objectives", in Johnson, B.L. (Ed.) - Systems Approaches to Curriculum and Instruction in the Open Door College. UCLA. Junior College Leadership Programme, Occasional Report No. 9 (Los Angeles: University of California, School of Education, 1967) (p. 27)

and a biology course in 1964-65. However, this teaching method had its largest development at Oakland Community College, Michigan, which opened in the autumn of 1965 with an enrolment of about 4,000 students and with all courses using exclusively the audio-tutorial method.

After much experimentation and experience, Postlethwait concluded that in teaching undergraduate botany at Purdue University it was essential to make provision for the diversity of backgrounds of the students who enrolled in the course and he initiated the development of what was to become the audio-tutorial plan of teaching. He recorded on tape each week special lectures to assist low-achieving students and he later refined and expanded these lectures and co-ordinated them with the textbook and laboratory manual of the course. In developing these lectures, Postlethwait gave particular attention to defining specific instructional objectives and meticulous attention to teaching outcomes has always characterised his work at Purdue.

As the co-ordinated use of Postlethwait's recorded lectures and printed materials were evaluated they developed into a plan for teaching all students in freshman botany. The tape recording evolved from its lecture form into a discussion in which the professor was tutoring a student individually through a series of learning experiences. A variety of learning experiences was included: textbook study, use of microscope, collecting and analysing data, observing plant specimens, viewing pictures, watching time-lapse films, examining charts and diagrams, performing experiments, and listening to brief lectures or discussions. After a semester's experimental use of these plans with one section, the decision was made to restructure the freshman botany course and to use what is now known as the audio-tutorial plan. Empirical evidence from the Purdue experiments reveal that student learning in the botany course has increased and student attitudes towards the course have improved. In addition, instructional costs have decreased.

(d) A Description of Audio-Tutorial Instruction

Although audio-tutorial instruction varies from institution to institution and from one teacher to another, it can typically be described as a type of programmed instruction which uses varied types of learning experiences and media of instruction. This instruction generally utilizes three types of sessions: the General Assembly Session (GAS), the Small Assembly Session (SAS), and the Individual Study Session (ISS).

GAS - These sessions are normally held weekly and last one hour. All students in a particular course attend these meetings at which learning experiences which can best be provided in large groups are offered. On these occasions, "master teachers" are required to motivate the students.

SAS - At these weekly sessions, which are a type of discussion-quiz, students have an opportunity to discuss materials of the course and to raise questions and to evaluate and comment on instructional materials and procedures used in the course.

ISS - The number of these sessions per week will depend on such factors as the ability of the student, his capacity to apply himself to study, and the nature of the materials to be learned. Specially designed laboratories equipped with individual carrels containing film projectors and audio-tape machines, and other materials, are usually made available for this type of session. In most institutions offering this type of instruction the students involved are allowed to come to the laboratories at their convenience throughout the day and until 10p.m. Assignments which have been given to ISS have been programmed in considerable detail and are planned to be mainly self-directive. Instructors or tutors are nonetheless available in adjacent laboratories at all times in order to be able to provide help when needed. Independent Study Sessions comprise, perhaps, the heart of audio-tutorial learning, with its emphasis on individual learning.

(e) Some Examples

As stated earlier, Oakland Community College was one of the leaders in the field of audio-tutorial teaching among the

community colleges. At Oakland the decision to adopt this type of instruction had been made prior to appointing teaching staff and only those who were committed to using this method were employed. Before it opened in September 1965, Oakland engaged the services of Litton Instructional Materials to help develop and put into operation plans for the college-wide use of audio-tutorial instruction. The plan designed was basically similar to that used by Postlethwait at Purdue, differing, however, in that Oakland's was a total involvement in this approach whereas Postlethwait's work is limited to single courses.

Although the experimental work done at Oakland has been invaluable, it would appear that the results have not been convincing enough to sustain an overall institutional acceptance of this plan and a resurgence of more conventional methods combined with some audio-tutorial teaching seems to be the present position. (1) The influence of Purdue and Oakland has been widespread and throughout the United States institutions have been experimenting with this type of instruction.

In the Junior College District of St. Louis, Missouri, this type of teaching is being used in science courses at Meramec Community College, Florissant Valley Community College, and Forest Park Community College. All of these programmes are pursued on a self-scheduled study basis, in specially designed carrels, making use of audio-taped recordings and an audio-tutorial laboratory manual - written by members of the teaching staff and illustrated by art department members at the respective colleges - as well as the co-ordination of laboratory work with taped lectures and the study of text materials.

(1) The author noted, in a visit to Oakland Community College in October 1971, that although audio-tutorial methods were still widely used, there had been a decline in their use and the College is now only partially committed to this approach. Even where audio-tutorial work was in evidence this work was often supported by lectures.

An example of this type of learning laboratory can also be seen at Golden West Junior College near Los Angeles, California. At Golden West this audio-tutorial approach is confined to botany and some basic mathematics courses.

4. ACCREDITATION

A. Credit by Examination

Credit by examination is essentially the awarding of credit for theoretical knowledge gained outside the traditional lecture-room situation. The examination provides the basis for the kinds and numbers of credits awarded. Programmes in credit by examination are innovative because they acknowledge that people do indeed learn either incidentally or purposefully through their life experiences and, in so doing, should be allowed the alternative of receiving formal credit and, in some cases, credentials for that learning.

During the last decade much discussion, and a certain amount of activity, has centred around non-traditional students, non-traditional study, and non-traditional degrees. The College Entrance Examination Board (CEEB), with the aid of Educational Testing Services (ETS), has created a College-Level Examination Programme (CLEP). (1) Developed with the purpose of establishing a national system of awarding college credit by examination, this programme has been leading the field since 1965. Founded on the belief that what a person knows is more important than how he came to know it, CLEP was designed for people who learn through correspondence and university extension courses, educational television, adult education programmes, on-the-job training, independent study, and life experiences. By 1970 almost one thousand colleges and universities were participating in CLEP and awarding credit to such non-traditional students for acceptable examination scores.

(1) The CEEB is a non-profit organisation which provides tests and other educational services for schools, colleges and universities. It was founded in 1900 and is located in New York. In administering its CLEP the Board has the help of ETS, an independent, non-profit agency with headquarters in Princeton, New Jersey.

CLEP offers three types of examinations:

(i) General Examinations are designed to measure the general learning, often referred to as general education, of an individual compared with that of a regularly enrolled student who has successfully completed two years of undergraduate study. The General Examinations are composed of five separate multiple-choice tests, varying in length from 60 to 75 minutes, in English Composition, Humanities, Mathematics, Natural Sciences, and Social Sciences-History. They may be taken separately or in various combinations.

(ii) Subject Examinations are linked more closely to a specific course or subject and are intended to measure an individual's achievement in that particular area. They are not simply final examinations or end-of-course tests, since they are designed to assess a student's overall mastery of the subject and to compare his grasp of the ideas, skills and information with those normally expected of students who successfully complete a similar course in a good quality college or university. In addition to the 90 minute multiple-choice section, each Subject Examination offers an optional essay portion, which is sent ungraded to the institution administering the tests. A total of 29 specified undergraduate subjects are available. (1)

(iii) Brief Tests are 45 minute versions of the Subject Examinations and are intended primarily as measures of group achievement. They are only available to colleges and universities to use with their own students and are not offered at CLEP test centres. Brief Tests are not designed to serve as the sole basis for final or irrevocable decisions about individuals; because of their shorter length, they are less reliable and sample the content areas less comprehensively than the longer Subject Examinations. Some of the advantages of these tests include the fact that they are less expensive than the other types, they can be given in a single class period, and because they are marked on

(1) This total is increased regularly and is therefore difficult to update. The total given reflected the number of subjects available at the end of 1971.

campus, the results may be used very quickly.

B. The Significance of the College-Level Examination Programme

The central idea that forms the basis of CLEP is twofold. Firstly, CLEP provides an opportunity for those who have achieved subject mastery at the college or university level, regardless of where or how, to demonstrate their competence. Secondly, there is the expectation that colleges and universities will recognise such competence as a basis for awarding credit towards a degree.

Credit by examination programmes have many advantages for both students and colleges or universities. In an era of ever-increasing student enrolments, a programme such as CLEP helps to individualise the education of many students by permitting them to bypass subjects they have mastered and pursue more advanced work in an area of particular interest. This, in turn, reduces the number of students in a course who are bored or indifferent and relieves some of the pressure on the college's academic staff and physical resources. Further, by acknowledging students' prior achievement and enabling them to move on to more advanced work, colleges and universities are better able to meet student demands for "relevance" in their education. Granting of credit on the basis of examinations also means that institutions of higher education are able to attract returning servicemen and other adult students whose presence on campus creates a more stimulating environment and a more heterogeneous student body.

For entering freshmen: Many universities and colleges already have policies of credit by examination for their incoming freshmen. The Advanced Placement Programme (AP) has been the catalyst in convincing institutions that college-level learning can take place during high school. Moreover, some universities have recognised that CLEP supplements AP by offering college-level examinations in areas other than those of the AP. Students whose secondary schools offered college-level courses in subjects such as

psychology or accounting, for example, may take the corresponding CLEP Subject Examination. If their scores are satisfactory, credit or advanced standing can be awarded by the college. Similarly, entering freshmen who have been doing independent or informal study can also be offered an opportunity to demonstrate, by means of CLEP tests, that they have already mastered a particular subject.

For transfer students: In selecting students who are transferring from other colleges and universities, an institution may automatically reject those applicants whose previous grade averages are below a predetermined level. However, a transfer student's level of general educational achievement is a product of many educational experiences in addition to those recorded on his transcript. The information available from a student's transcript can be supplemented by scores on the General Examinations, thus providing an opportunity for able, but undervalued students, to demonstrate that their level of achievement is greater than that appearing in their previous grade average.

A college may also deny a transfer student credit for certain sections of his previous education because of the grade received, the description of the course, or the institution at which the course was taken. In this situation, the Subject Examinations provide an objective means by which an institution can assess the achievement of a transfer student in a particular field. If he proves competent at an acceptable level, the institution then has a basis for granting credit independent of the student's former college, course or grade.

For adults: Many adults who have been denied an opportunity of earning a college degree, have devoted their energies to achieving competence in college-level subjects in a variety of ways. When such adults decide to pursue a degree, CLEP can be used to gain credit for prior achievement thus enabling adult students to avoid repeating material already mastered while shortening the time needed to complete the degree. Both of these factors increase the likelihood that the adult

students will successfully complete the requirements for graduation.

For servicemen: A variety of college-level educational opportunities are provided by the United States Armed Forces. Arrangements are often made with colleges near bases to offer courses to servicemen while other instruction is provided by on-base courses of the United States Armed Forces Institute. CLEP examinations offer an opportunity of earning credit for military-sponsored education that might otherwise be ignored or dismissed as irrelevant. The tests are as suitable for the serviceman seeking a degree while still on active service as for the ex-serviceman who wants to enter college after demobilisation.

C. Community Colleges and Credit by Examination

About half the people attending community colleges are adults, many of them mature adults (25+ years), and it is this age group which is most affected by the application of credit by examination. Present trends seem to indicate that in future more and more community college students will be studying in their homes via television or other media and it is particularly important and necessary for the adult student who is interested in saving both time and money that institutions assign credit for whatever a student has learned by whatever informal means. Most part-time students will agree that their most pressing problem is time - time to get studying done, time needed to complete an assignment. If a mature student can only take two courses per semester, the time for completing his programme seems interminable. It also becomes a very expensive process, because in the meantime the women are having children, and many are putting their own children through school. Time and money are therefore critical factors and it is here that credit by examination can be valuable.

Certain problems arise in offering credit by examination, some of which are peculiar to senior institutions and some to the community colleges. If, for example, credit is determined by departmental examinations within an institution,

it becomes difficult to measure the affective values that hopefully have developed. In a multi-college, multi-campus district, such as the Metropolitan Junior College District in Kansas City, Missouri, the fact that each department makes up its own examination leads to an uneven use of credit by examination because the same examination is not used on all campuses. Students soon learn that one should go to the downtown campus for certain courses because the examinations there are easier than those given for the same course on the western campus, although the same amount of credit is given in both places.

Dr. Alice Thurston highlighted yet another problem in a paper presented at a series of conferences (1) on Credit by Examination which were held in 1971:

"I think a big stumbling block is the fact that most faculty are reluctant to approve a credit by examination policy because they feel that you can't really know the subject unless you come and sit at the instructor's feet. And you have to sit there for the entire semester. This, I suppose, is a carry-over from the old German idea where Herr Professor entered and all of the students rose to their feet and paid homage. A lot of ego is involved in the business." (2)

The use of a standardised examination at the end of a very innovative course, for example, an interdisciplinary course, illustrates another difficulty of credit by examination. To be appropriate in such cases, an examination would probably have to be created by those involved in teaching the course. The same kind of problem arises in

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- (1) Three meetings on the subject of Credit by Examination were jointly organised by The Western Interstate Commission for Higher Education (WICHE) and the College Entrance Examination Board (CEEB). The meetings were held in Salt Lake City and Los Angeles during February 1971, and in Seattle during April 1971.
- (2) Thurston, A. - "Extending Appropriate Learning Opportunities". Published in Credit by Examination. Proceedings from Workshops in the West 1971 - Cosponsored by WICHE and CEEB. (pp. 15-16)

courses taught by the systems approach, because the final examination should really include all the instructional objectives built into the syllabus.

Yet another problem which is restricted to the community college has to do with the transferability of credit granted by examination. These institutions have always been very sensitive about the problem of transfer of credit because 30-40% of their students will generally transfer each year. Community colleges are concerned about whether four-year colleges and universities will accept their credit or not and also how they should record credit by examination on the student transcripts. If the words "Credit by Examination" are entered, it can open up all kinds of questions since there remain many upper-division institutions which have not entirely accepted this concept.

The cutting score (1) presents another problem since a variety of cutting scores are used. Some colleges and universities give credit for performance at the 25th percentile, while others are using the 50th or 75th percentile. The question always arises: if a community college decides to use the 25th percentile on the sophomore norms, will the senior college or university recognise it and give the student credit when he transfers? This dilemma can be solved in two ways. Either all the senior colleges and universities in the region will accept what the community colleges do - honouring and recognising their integrity and accepting their judgement - or else the community colleges can try to get all these senior institutions to accept a common cutting score. Without consensus on one or both of these agreements, the community colleges are in an untenable position (as are those students who seek to transfer to a distant state or to a college outside the area of agreement!)

D. The External Degree

The external degree could reasonably be described as a specialised case of the credit by examination movement and

(1) Cutting score is the point which differentiates between those who are allowed credit and those who are not.

as the ultimate proof of its viability. The most dramatic development in colleges and universities during the last decade has been the willingness of segments of the academic community to accept fully the concept of credit by examination and to allow students to earn academic credits, and even degrees, in recognition of study done in non-traditional ways and without having to live on the campus, or even attend classes there.

In the past the words "college" and "university" have generally meant three or four uninterrupted years in one institution, in a place removed from the diversions of ordinary life. It was the physical and social aspects of campus life that traditionally defined "going to college or university". However, the assumption that the acquiring of a college or university education need not be dependent upon the familiar campus setting, is central to most of the new non-campus degree programmes. What counts is not where or for how long a student attends college, but what actually happens to him intellectually during his collegiate years. Many innovators in the field of non-campus colleges believe that the preoccupation with the physical and social context of tertiary education has obscured the more crucial questions which concern what is happening inside the student's head.

Within the structure of higher education the parietal element has been too heavily emphasised and despite the fact that more recently explicit parietal rules and social regulations have been liberalised or abolished, the fundamental process of college and university education has remained implicitly coercive.

Planners and advocates of external degrees believe that the individual's own motivation, his desire to learn and grow, should influence more strongly the formulation of educational policy. They believe that the gaining of a college or university degree should represent a positive act of individual volition rather than passive acquiescence in an institution's routines and requirements.

The chancellor and vice-chancellor of the State University of New York summed up current ideas in the external degree field in an article published recently:

"In the conversation and writings of those responsible for the new proposals, one finds the conviction that genuine intellectual competence and not some magic number of 'years in residence' or 'credit hours', should be the single most important criterion for the baccalaureate degree. What a person knows, not how many courses he has taken, should be the fundamental concern towards which all academic planning is directed." (1)

The external degree is manifesting itself in many different forms throughout the United States and, indeed, throughout the world. One of the largest and most familiar patterns of external degree is to allow conventional academic work to be done off-campus, over a longer period than the usual three or four years and often through courses designed mainly for adults. The prototype is the University of London external degree which for a hundred years has served the Empire and enabled students to work towards their degree in any manner they wish, and in any part of the world, so long as they pass the required examination set by the University.

More recently in England the "Open University" has started functioning (2) in an attempt to democratise the traditionally elitist university education and to provide an alternative approach for adults which is both inexpensive and effective.

There are six degree courses offered by the Open University: humanities, science, social studies, technology, education, and mathematics. Thousands of students are listening to radio lectures, going through correspondence

(1) Boyer, E.L. and Keller, G.C. - "The Big Move to Non-Campus Colleges". Saturday Review, July 17, 1971. (pp. 46-47)

(2) Similar ventures are also under way in Australia, Japan and other countries.

courses, watching television programmes, and reading in local libraries in preparation for examinations which they will take at one of the 250 local study centres. At these centres they also meet some of the 2,500 tutors and counsellors who are acting as study assistants and supervisors. Students also attend a week of lectures, seminars and discussions at one of the twelve regional centres or at one of England's established colleges or universities.

In the United States the U.S. Navy's programme known as "Afloat College Education", allows for a ship's crew to earn up to two years of college or university credit at one of five institutions (Harvard is one of them!) by passing examinations based on reading, mastery of filmed courses, and attendance at lectures and seminars conducted by professors who visit their ship while it is in harbour.

One of the most interesting plans in this category is the recently initiated "University Without Walls". This concept was conceived by Samuel Baskin a professor of psychology at Antioch College in Ohio and was formerly instituted when Professor Baskin received a planning grant from the United States Office of Education and from the Ford Foundation. What he plans is an educational programme confined mainly to a consortium of nineteen co-operating institutions. Included in this group are such diverse institutions as the University of South Carolina, the predominantly black Howard University, the small Staten Island Community College, the large University of Minnesota and the Quaker Friends World College.

Within each of these colleges or universities a group of forty to one hundred students will follow an academic programme with guidelines drawn by the University Without Walls, a type of academic holding company with little in the way of formal staff or administrative control. Part of the time these students may take conventional courses at their own colleges, but they may also move about to one or more of the co-operating institutions. They may, for example, serve supervised internships in businesses or hospitals, or

study independently with the aid of reading lists, televised lectures, records and tapes. This programme is quite clearly a rejection of the traditional concept of college education with its exclusive stress on single-campus residency, formal lectures, and narrow departmental majors. It also widens the conventional notion of "academic staff" to include experts and talented people from the "outside world" - businessmen, musicians, government officials and artists.

A less radical category of external degree study has been the continued development and extension of efforts that have been made by many American universities and colleges to increase the opportunity for off-campus learning experiences within the framework of the traditional pattern of campus life. For many years, undergraduates have undertaken a "junior year abroad" or taken part in various types of work-study programmes. The structure of newer programmes of this type may be loose, as in those institutions where gifted students may be allowed as much as a year off their normal attendance in order to write a novel, study German literature or other special interests and be given academic credit. In some instances the programmes are highly structured such as Chapman College's "World Campus Afloat", which offers undergraduates courses on a ship which travels around the world with fields trips ashore whenever possible.

Although there are practical difficulties involved in such programmes, these efforts do represent a movement towards a type of higher education which is far more relevant to the conditions and opportunities of contemporary life. These programmes do try to break down the barrier which has all too often been erected between the campus and the real world "out there". The designers of such off-campus opportunities generally acknowledge that the individual college campus remains an essential intellectual base, but it is seen as only one element in a far broader educational environment - an environment which includes the polluted lake or river, the local black ghetto, the threatened

wilderness, the industrial laboratory, the city halfway round the world and the social service agency.

Yet another off-campus external degree category is the New York State Education Department's unusual College Proficiency Examination Programme (CPEP). This Programme was established in an effort to open up the educational opportunities of the State to individuals who had acquired college-level knowledge in ways other than through regular classroom attendance. Anyone may take a College Proficiency Examination if he believes he is proficient in one or more of the fields of college study for which examinations have been developed. At present it is possible to be tested in the arts and sciences, professional education, foreign languages, the nursing sciences, and the health education sciences. The State Education Department itself does not grant course credit. This is left to the individual institution since most colleges and universities in New York State (200 of them) now grant credit for these examinations. In no case may an individual earn all of the credits required for a degree without classroom experience and the New York State Board of Regents has recommended that no more than half of the credits required for a degree be granted on the basis of examination. Colleges grant credit for successful CPEP performance only after the individual applies for admission as a full- or part-time student at a recognised institution.

An interesting approach to off-campus education is the State University of New York's (SUNY) new Empire State College. This college, which is in the active planning stage, will be similar in many respects to other experiments in the granting of external degrees and has been influenced by innovations in the United States and other countries. Supported by a \$1 million joint grant from the Carnegie Corporation and the Ford Foundation this experimental "college without a campus" will nonetheless retain the opportunity for occasional on-campus study and it will encourage a close student-teacher relationship and offer a wide variety of educational options to the student.

Because SUNY (1) is a kind of multi-faceted consortium of institutions with widely varied characteristics and resources the central idea of Empire State College is to create an academic programme that will release to the students the resources of the entire state university system and free them from the restraints of residence on a single campus. A combination of off-campus work-study experiences, educational films, cassettes, home study, correspondence courses, and periods of study abroad or elsewhere in the United States, will greatly enlarge the options open to each student. Time limits for gaining a degree will also be far more flexible and a student will be allowed to take two, three, four or even eight years to complete his degree depending on the individual student's circumstances and capacity for work. While some students will spend most of their time studying off-campus, others may elect to do half or two-thirds of their work in residence at one of the State University's institutions.

Empire State College will have a small core of academic staff at a central headquarters, while twenty regional study centres (with resident tutors) will be set up throughout the state to design and direct the programmes, prepare the correspondence courses, approve each student's plan of study, and counsel the students by mail, telephone, and periodic personal meetings. In this way the educational experience of each student will be guided and evaluated at every stage by trained scholars. While the student will complete assigned papers, reports and examinations, he will be largely free of pressures to achieve a particular grade and of specific credit-hour requirements. He will be able to concentrate more on his own education and worry less about the requirements of a specific institution.

(1) SUNY is actually a single entity made up of seventy separate institutions, including liberal arts colleges, community colleges, four major universities and specialised institutions (in agriculture, forestry, engineering etc).

Empire State College acknowledges five basic assumptions which are implicit in the design of this "institution":

(i) Four years, and more particularly four consecutive years, are not an inviolable time span essential for the acquiring of a bachelor's degree. Shorter or longer periods of study, possibly interrupted by other activities, are not detrimental to, and may even improve, the net effectiveness of college or university study.

(ii) Since there is such a wide variety of students, and because of the emergence of so many new fields of academic concern, the curriculum should no longer be the exclusive concern of the academic staff. Responsibility for its design and contents should be shared by staff and students.

(iii) Residency on a single college campus is no longer requisite for quality education. Evidence supporting this assumption is provided by the fact that twenty per cent of college and university students in the United States already study at more than one institution during their undergraduate years.

(iv) Although still important, formal lecture-room instruction is no longer the sole or even the principle means of acquiring information and ideas at the tertiary level.

(v) No member of the academic staff can any longer be regarded solely as a purveyor of factual knowledge, even in his field of specialisation. It is acknowledged that frequent contact with mature scholars is vital to a good college or university education. Academic staff must also act as sensitive intellectual guides, as questioners of personal and social values and actions, and as provocative stimulants urging students to discover their own capacity for creative and critical thought.

Taken singly, none of these assumptions is entirely new, but taken together and seriously applied they could add up to a new vision of what tertiary education can and should entail.

SUNY also provides an Independent Study Programme which is designed to meet the needs of those who wish to undertake college studies but who are unable to attend classes at a

campus. A student may register at any time of the year and work at his own pace and his correspondence instructor may modify a course according to the background, needs, interests and progress of the student. The courses are open to anyone who believes he is capable of completing the requirements. However, no more than fifteen credit hours of the required credits for the associate degree and no more than thirty hours of the required credits for the bachelor's degree may be earned by Independent Study. Each course must be completed within twelve months of the date of enrolment. Students select courses at one of the participating institutions (sixteen) and send their registration forms direct to that institution.

No one would deny that a factor in the development of external degree programmes is a search for economy and some sceptics feel that university and college officials are desperately trying to ease the financial crisis by attempting ways of processing more students for less money. The fact that many of the leading private colleges now demand between \$4,000 and \$5,000 a year for residence and tuition and public institutions up to \$3,000, has obviously resulted in a serious search for new ways of providing high-quality education at a low cost. However, there are more fundamental reasons for these attempts to restructure tertiary education. These reasons stem from qualitative and quantitative changes in American youth, in the character of American society, and in present trends within tertiary education itself.

The old yardsticks of tertiary education - years in residence, credit-hours for courses, grading, staff-student ratio - become increasingly difficult to apply. The notions that there is a fixed "body of knowledge" to be delivered to the young, that academic staff necessarily know what is best for students, and that the departmental major is the only desirable method of organising intellectual enquiry, are being seriously challenged.

E. Summary

The re-emergence of the concept of the external degree has generated a high level of controversy among comfortable academic teachers while the interest expressed by the Ford Foundation, the Carnegie Corporation and the United States Office of Education, has forced college and university administrators to examine and consider such possibilities. George Hanford, the Acting Director of the Office of External Degree Plans of the CEEB has summed up the situation quite succinctly:

"In the months and, perhaps, years ahead, many external degree programmes will be proposed and a goodly number established. In the end a few substantial ones will have survived, and higher education will somehow have been changed as a result." (1)

A national, broadly representative, deliberative body has been established under a \$140,000 grant from the Carnegie Foundation and is known as Commission on Non-traditional Study. Because the terms "non-traditional study" and "external degree" can have a myriad of meanings there is danger that public higher education, private enterprise, and the media will run off in all directions at once. There is a real danger of dilution of the educational process, danger of the lowering of academic standards, and it is in an attempt to provide some kind of national perspective and of maintaining standards, that such a Commission has been established by the CEEB. This Commission provides a mechanism for ensuring that the provision of external degrees does not degenerate into a fad, for ensuring that educationally sound procedures are established and practices followed, and that appropriate, meaningful models are designed.

The external degree programme known as the Bachelor of Liberal Studies, of the University of Oklahoma; the Bachelor of Independent Studies at Brigham Young University in Provo,

(1) Hanford, G. - "The External Degree". Published in Credit by Examination - Proceedings from Workshops in the West 1971 Cosponsored by WICHE and CEEB. (p. 1)

Utah; work done in this field at Goddard College; Roosevelt University's plan for their College of Continuing Education inspired by George Dillavou; the National College, Incorporated, based in Florida; the International University and the College of Individual Learning; are all manifestations of this concept and variations on the same theme. These and many other proposals for off-campus or non-campus study contain many details to be worked out and many objections and problems (1) to be overcome. But they nevertheless represent serious efforts to experiment with fresh patterns of undergraduate education. The profound transformations in young people, in society, and in tertiary education, as well as the grave financial condition of educational institutions, compel radical changes in the venerable but outmoded patterns of American collegiate study.

As the recent Carnegie Commission report Less Time, More Options suggested, today's colleges and universities clearly must offer many tracks, many options, and many different programmes to serve the new variety of students and to assist in the exploration of new areas of intellectual enquiry. Large universities may have to break up into several colleges. Smaller colleges may have to establish links with other colleges and other kinds of learning institutions in society and all will have to allow increased opportunities for independent and off-campus study.

At the end of their discerning article on non-campus colleges, George Keller and Ernest Boyer concluded:

"It would be tragic if the social institution that has contributed so much to our civilisation should fail to respond vigorously to the challenges that confront it at this crucial moment. The present crisis is assuredly one of dollars. But even more, it is one of will, of creative energy, of new ideas. Higher education is in a period of painful transition. The greatest need is to act boldly,

(1) For example: How many academic credit hours should a student receive for forty hours of tutoring migrant workers?

with fresh vision, in the face of new conditions." (1)

5. ARTICULATION AND FLEXIBILITY OF ACCESS

A. Introduction

In at least half of the fifty states organised efforts are currently underway to establish machinery for the smooth transfer of students from community and junior colleges to senior colleges and universities.

Although slow in developing, guidelines for transfer on a state-wide basis are being prepared in such widely scattered states as Kansas, Maryland, North Dakota, Washington, and West Virginia.

Committees on articulation, heretofore common in only a few states, have recently been formed in Connecticut, Iowa, Missouri, Oregon, and North Carolina. Following the example of Florida (1965) and Georgia (1968), the trend is towards state-wide plans based on the successful completion of the Associate in Arts or Science degree as the transfer standard.

In Illinois and Washington agreements setting out detailed "transfer packages" are nearing completion. Illinois is the only state where an articulation plan has been mandated by legislation - the Junior College Act of 1965. Section 102-11 of that Act empowers the Illinois Junior College Board to develop articulation procedures in order that maximum freedom of transfer among junior colleges and degree-granting institutions be available and consistent with minimum admission policies established by the Board of Higher Education. (2)

(1) Boyer, E.L. and Keller, G.C. - "The Big Move to Non-Campus Colleges". Saturday Review, July 17, 1971. (p. 58)

(2) In November 1971, the Illinois Council on Articulation published a useful booklet entitled Performance of Transfer Students Within Illinois Institutions of Higher Education. This booklet has helped education authorities in that state to gain an insight into the mobility patterns of college age youth and into the problems of transfer from community colleges to four-year institutions and universities.

Although transfer of occupational-type curricula (Associate in Applied Science or similar career degrees) still presents a major problem, credit for such work is acceptable in senior institutions in some twenty states. Such credit is obviously most easily allowed by institutions which offer baccalaureate degrees in vocational-technical fields. This type of credit acceptance is probably most advanced in North Carolina where a number of senior colleges and universities offer four-year occupational programmes. Elective credit within an established maximum has also been announced by the two public universities in Washington and throughout the California system of state universities and colleges.

It is true that if an associate degree graduate of a career programme looks long enough - and hard enough - he will probably find a four-year college which will accept him as a transfer student. However, all too often such students have to forfeit many credits and they are frequently forced into a curriculum at the upper-level institution that does not relate to, or take recognition of, skills and competencies gained at a community college.

Rochester Institute of Technology recently examined the problem of career transfers with a view to changing the procedure, the rigid course patterns, and the stigma which is often attached to such a transfer. In order to take the sting out of transfer setbacks, and to prove the validity of the Associate in Applied Science or similar career degrees, the Institute created in 1970 a new upper-division School of Applied Science which caters directly for the technically-oriented graduate of the community college. At Rochester full credit is given for the associate degree in a technical or career field.

Four-year degree granting institutions, and particularly major universities, are usually cautious about allowing credits for ethnic studies curricula, interdisciplinary programmes, and other experimental efforts such as Black Studies and Chicano programmes that are becoming more common

in community colleges. Granting of transfer credits is still controlled in universities and senior colleges by complex and highly technical sets of "working rules". Limitations remain fairly constant on the maximum number of credits a student may transfer (from 64-70 semester and 90-104 quarter units) and minimum grade point average for transfer admission (2.0).

Although the number of transferable units is still rather rigidly controlled by universities and four-year institutions, the kind of credit allowable is rapidly increasing. A major breakthrough in this regard is the widespread acceptance of advanced placement examinations provided by the Council on College Level Examination. A full Associate in Arts degree may now be earned by passing a series of CLEP examinations (described earlier in this chapter) and these developments are clearly hastening the break with traditional and outmoded regulations guarding transfer into upper-division standing.

Some universities ignore non-punitive grading systems, simply requiring a minimum number of transferable units with grades for admission. However, by ignoring the grading system of the transfer institution, a senior institution compounds the dilemma of transfer students.

One of the most controversial of all issues associated with the detail of articulation continues to be the "D" grade transfer. A scattering of senior institutions in some states accept "D" grades but few senior colleges have a system for repeating courses.

In a recent article by Kintzer, the whole direction of articulation agreements is summed up thus:

"Evidence is overwhelming that articulation is destined to become a statewide phenomenon with the associate degree as the acceptable standard. In most states responsibility for solving transfer problems is now being assumed by state government. Agencies of the state are increasingly being assigned co-ordinating, if not controlling authority. Interinstitutional agreements, particularly those organised voluntarily, with meagre funding and low key political

influence are likely to be past history by the end of the decade." (1)

Articulation agreements will inevitably become more politically-inspired rather than educationally-based as state governmental units take the initiative for developing and implementing plans. Although state organisation for co-ordination of articulation is undoubtedly necessary, local prerogatives will have to be guarded otherwise they may be usurped.

B. Upper-Division Colleges and Universities

The community college transfer student has long been perplexed with the multifarious problem of moving from a junior to a senior college without some loss of credit, money, time, and emotional and physical energy.

According to Willingham "...some guidelines are ignored by many institutions, and some institutions have a limited commitment to improve transfer articulation." (2) It seems ironic when considering the number of students now attending community colleges that more is not being done by senior colleges to encourage community college transfer by ensuring smoother articulation.

In 1970, one in 2.9 students or 34% of first-time college students were enrolled in some type of community or junior college. If the trend continues, it is estimated that by 1979, one in every 2.5 students or 40% of those enrolled in tertiary education for the first time will be attending these colleges. A possible answer to the articulation problem is the creation of upper-level colleges and universities. The upper-level institutions have been designed with the lower-level (community college) transfer student in mind.

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- (1) Kintzer, F.C. - "Focus on Transfer - A New Awareness". Community and Junior College Journal. Washington, D.C.: Volume 43, Number 6, March 1973. (p. 38)
- (2) Willingham, W.W. - The No. 2 Access Problem: Transfer to the Upper Division. Washington, D.C.: ERIC Clearinghouse on Higher Education, American Association for Higher Education, 1972. (p. 38)

Prior to 1964 only California, Tennessee, and Indiana had upper-level institutions in operation and in each case these were privately supported. The state of Florida has pioneered the upper-level movement in recent years with the Florida Atlantic University at Boca Raton opening in 1964 and the University of West Florida at Pensacola which started functioning in 1967. Two additional upper-level universities in Florida, one in Jacksonville and the other in Miami opened in 1972.

Illinois has two upper-level universities in operation, namely, Governors State University at Chicago and Sangamon State University at Springfield. New York has two - CUNYs Richmond College at Staten Island and SUNY at Utica. California has the Otis Art Institute in Los Angeles County, while in Minnesota there is the Metropolitan State College at St. Paul, and in Pennsylvania the Capitol Campus of Pennsylvania State University at Middletown serves this purpose. In Texas there are two existing upper-division institutions with the creation of five more free-standing institutions authorised. In addition there are private upper-division institutions in Tennessee, Ohio, New York, Michigan, Indiana, and California. In November 1971, the Association of Upper-Level Colleges and Universities (organised in November 1970) reported 24 upper-level institutions currently operating or planned in the United States.

The upper-level institution offers academic programmes which have been designed solely for the students who have completed their first two years at a community college or some other similar institution. Most of these institutions offer post-graduate as well as undergraduate programmes.

The advantages of upper-level colleges or universities include those which accrue to the state and tertiary education generally and those which benefit the student:

(i) If there are large numbers of community college students in an area where opportunities for further education are limited, the upper-level institution provides an

economically and educationally feasible alternative to the creation of four-year institutions which duplicate both facilities and programmes of existing community colleges.

(ii) New upper-level institutions can be planned to meet the needs for specific concentration in baccalaureate education.

(iii) The upper-level institution can be more responsive to local needs and serve as a means of direct entry into occupations rather than research-oriented professions.

(iv) Curricula in the upper-level institution are developed primarily with the community college transfer student in mind so that the programmes can more effectively meet the needs of the transfer student and transfer can be made with a minimum loss of time, credit, money, and emotion.

(v) At the upper-level institution there is no competition with people who have already been there two years. The teaching staff are positively oriented towards the transfer student. Their attitude towards these students is not affected by their commitment to the native student (as in four-year colleges and in universities).

(vi) A curricular tolerance exists at the upper-level institution that is often not possible at the traditional four-year college. The upper-level college is able to be more flexible in accepting transfer credit than most four-year institutions.

(vii) Like community colleges, upper-level institutions are primarily teaching-oriented with research being placed in a secondary position. Community college transfer students will obviously be used to this type of atmosphere.

The main advantages of this type of institution were summarised by The Association of Upper-Level Colleges and Universities in these words:

"By concentrating its efforts on the transfer student, the upper-level institution can provide an educational programme uniquely suited to their needs, while minimising the 'shock' which often accompanies transfer to a traditional four-year institution. The students at this type of institution have already undergone the principal sifting and

sorting and are more nature and more highly motivated. Therefore, more individual attention is both feasible and justified." (1)

The concept of upper-level institutions is still relatively new and many problems exist. However, for community and junior college transfer students it would appear to be the answer to some of the problems with which they have long been plagued.

(1) "The Upper-Level College and University Movement", a brochure published by The Association of Upper-Level Colleges and Universities, November 1971.

C H A P T E R F I V EADAPTATIONS OF THE CONCEPT OF SHORT-CYCLE TERTIARY
EDUCATION IN SELECTED COUNTRIES1. INTRODUCTION

Having examined the concept of short-cycle tertiary education in broad outline in Chapter Two and its more specific application in the form of the community college in the United States in Chapters Three and Four, it would now seem appropriate to consider the implementation of this concept in some other countries.

The selection of six countries in particular, does not imply that there are not many other nations also moving rapidly towards a system of short-cycle tertiary institutions. Certain systems have been singled out partly because they illustrate a specific trend, for example, the move away from elitism at tertiary level, or because they come within the scope of the author's personal experience and therefore provide research material gained from primary sources.

Developments in short-cycle tertiary education in Yugoslavia, where the two-year post-secondary institutions are now regarded as an integral part of the whole system of tertiary education, offer corroborative evidence for the main thesis of this study, namely, - the developing trend towards short-cycle tertiary education. In Sweden a Commission on Higher Education has been working since 1968 on the organisation and location of post-secondary institutions in the 1970s. The Commission has stated that it attaches great importance to the development of new short-cycle programmes as well as to the reform and incorporation of existing short-cycle institutions and programmes into a future coherent system of post-secondary education. This statement also supports the movement evident in many countries throughout the world which is demanding an examination and clarification of the place to be occupied by non-university and other short-cycle institutions.

The recent, rapid development of short-cycle post-secondary education in the Netherlands also illustrates this same trend. The expected move towards greater co-operation between the universities and SCIs in the form of "regional umbrella-universities" envisages easy transfer of students between the short-cycle and long-cycle sections of the "umbrella-university". Also indicative of the greater recognition being given to SCIs is the suggestion to create, in addition to the existing SCIs, short-cycle education within the universities to form a type of integrated comprehensive university (cf. the Comprehensive University or Integrierte Gesamthochschule concept in West Germany).

Many other examples spring to mind but the six systems selected provide ample evidence of world trends since they range from Europe to Canada and as far afield as Japan.

Greatest attention has been paid to recent developments in England and Wales, not only because the author has visited these countries more frequently, but because the English system has always been highly regarded as a trend-setter and its actions are likely to be adapted and copied in many parts of the world. The changes apparent in England today in the field of short-cycle tertiary education, represent only a part of the massive reform of the whole higher education structure and it seems logical to analyse in some detail how the SCI concept fits into the total pattern.

2. THE JAPANESE JUNIOR COLLEGE

A. Access to Tertiary Education

The admission requirement for higher institutions is the successful completion of upper-secondary school or its equivalent. However, this is only the minimum requirement. Since there are more applicants than space, each university conducts independent entrance examinations, primarily of the achievement type. The Ministry of Education, through a University Entrance Examination Council, exercises some degree of control as to the nature and timing of these examinations.

So desirous are many of the candidates to enter higher education that they repeat the examinations the next year, or in many instances, for several successive years. During the intervening year(s) most of the individuals (known as ronin) enrol in private preparatory schools. A Japanese educator once said:

"Japan formally has a 6-3-3-4 system of schools, like many of the school systems in America. But as several Japanese educationists have pointed out, the system is really a '6-3-3-X-4' system, where 'X' refers to a period when the senior high school graduate spends time on his own (ranging from a few months to several years) preparing for college entrance examinations." (1)

The prestige universities have a great influence on the aspirations and status of men. A young man's initial position in business or government, and indeed his later success and station in life, appear to depend primarily upon the rank of the university to which he is admitted. This results in a lack of interest on the part of men in any institution other than a university, and the greater the prestige of the university, the better. In any event, men appear to have little interest in junior colleges.

Since the professional and business life of the nation is largely carried on by men the rôle of women is still oriented primarily towards marriage and homemaking. Although women are often engaged in gainful employment before marriage, they tend to leave the labour market after they are married and the number of women seeking a university education is comparatively small. On the other hand, many young girls are likely to seek a two-year college education which gives them further background in general education and at the same time prepares them for home responsibilities which they tend to assume after graduating from junior colleges.

(1) Kobayashi, V.N. - "Japan's Examination Hell"
The Educational Forum 28:20; November 1963.

B. Short-Cycle Tertiary Education

In considering the development and present position of short-cycle tertiary education in Japan, two institutions will be examined, namely, the junior college and the technical college.

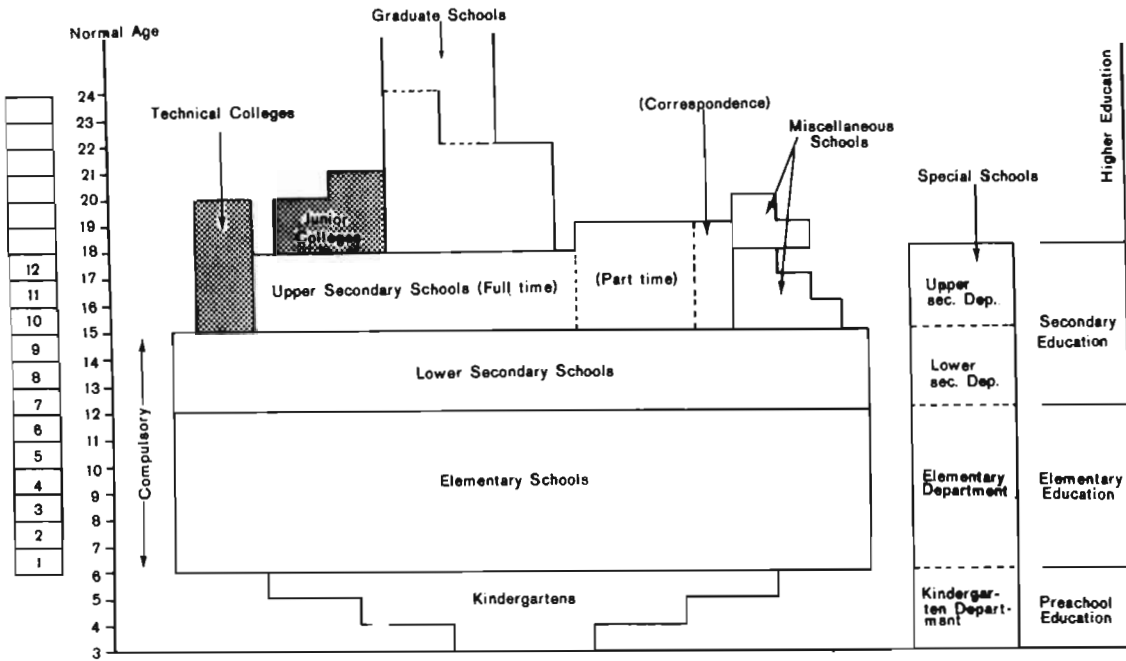
(a) The Junior Colleges

These institutions offer two- or three-year programmes of tertiary education which aim at "cultivating such abilities as may be needed in vocational or practical life" (Article 69-2 of the School Education Law). The junior colleges were created in 1950 and the original 140 colleges had an initial enrolment of 15,000. When they were established these colleges were considered to be provisional institutions and it was not until June 1964, that they were given formal recognition. The number of junior colleges rose rapidly and by 1971 there were 486 institutions with an enrolment of 263,219 students of whom 217,668 were female. Junior colleges are relatively small establishments since nearly half of them enrol only 200 to 600 students, and in 44 of them enrolment is less than 100.

The place occupied by the junior colleges and technical colleges is clearly indicated in the following diagram of the whole Japanese educational system:

DIAGRAM 9

The Place of the Junior Colleges and Technical Colleges
in the Japanese Educational System



Source: Facts about Japan - Public Information Bureau, Ministry of Foreign Affairs, Japan - Code No. 05501 (March 1970).

Junior colleges can be established by private individuals, by local authorities or by the national government. They offer both day and evening courses. Private junior colleges account for about 86% of all establishments and about 90% of student enrolments. What characterises them today is their provision of terminal education for women who comprise more than 80% of the student population. The preponderance of women students could possibly be attributed to the fact that many parents believe that four years of university education is too long for young women of marriageable age while three years of upper-secondary education is not sufficient.

Junior colleges, and more particularly the private institutions, could be described as colleges for "prospective brides". Women students are especially predominant in the departments of home economics, humanities, education and arts, and in these departments they number more than 70% of the student total. Homemaking, general culture and vocational certificates (teachers' certificates and certificates for kindergarten or day-nursery work) are considered to be essential marriage requirements for young ladies. For these reasons it is understandable that the proportion of students who do not enter employment after graduation is high. Unemployment figures are fairly high in, for example, home economics (37%), humanities (34.3%), and arts (50.4%), but the department of education is an exception with only 12.5% of the students not entering employment after graduation. These figures indicate that it is typical of some junior college female students that they occupy themselves in domestic affairs at home and practise flower arranging and the tea ceremony until they get married.

Professor Shimizu of the University of Tokyo sums up recent employment figures for junior college graduates in the following way:

"In 1970, of the total of 114,803 graduates from junior colleges, 80,189 or 69.8% entered employment. In the case of male students, 78.4% entered employment; in the case of female students, 68.5%. Junior college graduates going into industry enter widely differing fields such as services (37.2%), manufacturing (27.2%), finance and insurance (13.4%) and the wholesale and retail trades (13.2%). Other junior college graduates find employment in fields less widely distributed; they become 'clerical workers' (46.1%) teachers (21%) or 'medical and health technicians' (8.7%)." (1)

The low evaluation of junior college graduates as employees is reflected in their starting salaries. The

(1) Organisation for Economic Co-operation and Development - Short-Cycle Higher Education in Japan Paris: 23rd October, 1971. (Paper prepared by Professor Y. Shimizu) (DAS/EID/71.78) (p. 2)

level of education completed is but one factor by which salaries are determined. However, even allowing for other variables, the two-year difference in the length of education completed by junior college graduates as opposed to upper-secondary school-leavers seems to have no effect on starting salaries. It is true that female junior college graduates have little interest in a career and enter employment simply to bridge the gap between college and marriage and to gain some experience. Owing therefore to their lack of professional knowledge and techniques and their relatively short working life, female graduates cannot be regarded as a valuable source of labour.

Institutional problems also account for the low evaluation of junior college graduates. When compared with the universities the junior colleges provide only a "half-education" since the minimum number of credits required by a university for graduation is 124, and for junior colleges 62. Both professional and general education are therefore considerably watered down in the junior colleges.

Only about 5% of the junior college graduates actually transfer to universities but a number do enrol at miscellaneous schools (1) or continue with advanced courses in the institutions from which they graduated. In the case of home economics, humanities and art departments, 20-30% of the graduates enrol at miscellaneous schools. This tendency seems to imply that the junior colleges should not necessarily be regarded as terminal institutions. They would risk becoming educational cul-de-sacs if they do adhere to the principle of providing terminal education. However, if the universities were to adopt a more liberal policy, the percentage of junior college graduates wanting to transfer would possibly increase.

(1) Miscellaneous Schools is a general term for all institutions other than regular kindergartens, elementary schools, lower- and upper-secondary schools, colleges and universities. In 1971 they numbered 8,057 with an enrolment of more than 1,300,000 students of whom 60% were aged 18 to 21. Recently there has been an active movement to promote these institutions to the level of tertiary education.

In order to facilitate transfer, measures should be taken by the junior colleges to maintain close links with university programmes. The junior colleges should also place an emphasis either on general education or on professional education and not on a mixture of the two. The general acceptance of junior colleges as institutions for women must be changed. The low proportion of male students implies, amongst other things, inadequate provision of departments of technology and this will have to be rectified if a more reasonable balance between the sexes is to be established. If the private junior colleges, which account for the vast majority of institutions and students, were to be provided with more financial support then these institutions would be able to be more ambitious and co-operate more with the academic world. Very few junior colleges receive public funds for capital or operating expenditures. Most of them depend heavily upon tuition receipts and examination, library and museum fees to finance their programmes. Japan experiences somewhat the same sociological problem which America faces. Traditionally, the desire to study humanities reflected culture, but the new semi-professional technical fields, which have no tradition, lack social status in the eyes of many Japanese parents. (1)

Japanese junior colleges have shown wisdom in establishing their terminal programmes first. If the Japanese were to rush into the transfer programmes before the terminal programmes have acquired economic status, they might also inherit the American "prestige transfer problem" and defeat some of the vocational programmes now in progress.

(b) The Technical Colleges

Technical colleges were established as a result of the demand from industry for middle-level technicians during the

(1) Americans experience difficulty in building up their community college vocational programmes because most parental support is for the transfer programme. American students often reflect the belief that the transfer programme leads to jobs of more social consequence than the terminal programme.

late 1950s. In 1956 the Japanese Federation of Employer's Associations stated that there was an urgent need in industry for middle-level technicians, such as were supplied before World War II by engineering technical schools. Because this need was not being met by the two-year junior colleges they proposed the establishment of five-year technical colleges by combining the upper-secondary schools with junior colleges. In this way the Association hoped to reduce duplication of courses and inefficiency in upper-secondary schools and universities.

The Association's proposal to establish technical institutions caused a great deal of controversy and delay and eventually in 1962 the new technical colleges emerged. The technical colleges were the outcome of the rapid economic development in the early 1960s and as many as 54 of these colleges were established between 1962 and 1965.

It is only six years since technical colleges first supplied their graduates to industry and so far they have not been able to fulfil the aims of their establishment, namely, to meet the immediate needs of industry, since there are twenty jobs available for every technical college graduate.

From the first 18 technical colleges in 1962 the numbers have grown to 63 in 1971 of which 58 are engineering technical colleges and five are commercial technical colleges. As regards their establishing bodies, 52 are national, 4 are public and 7 are private. Total enrolment reached 44,314 in 1970, but included only 675 women. Technical colleges thus present a striking contrast to junior colleges on this point.

Yet another contrast with the junior colleges is evident in the geographical distribution of the technical colleges. Whereas nearly 30% of the junior colleges are concentrated in seven large cities, the technical colleges have been systematically distributed by the Government and all but 3 of the 47 prefectures have at least one technical college.

Almost all technical college graduates are employed by large enterprises in work related to their specialised field of study. They aim at producing technicians which are of a

better quality than university graduates although they only have a period of five years (starting at upper-secondary school level) compared with the university graduates' total of seven (three years upper-secondary school plus four years at a university). Technical colleges provide a curriculum of high density as illustrated below:

TABLE 3
COMPARISON OF TEACHING HOURS
(Technical Colleges = 100)

	Total hours	General basic subjects	Professional Subjects	
			Lectures	Laboratory and Practice
Universities plus upper-secondary schools	105	148	78	76
Technical Colleges	100	100	100	100
Junior Colleges and upper-secondary schools	82	123	50	44
Technical upper-secondary schools	58	52	52	53

Although the number of teaching hours in technical colleges is not so different from that in universities plus upper-secondary schools, the number of hours devoted to general basic subjects is greatly reduced while practical and professional subjects are emphasised. The number of teaching hours per week is 38 to 40 which averages out at more than seven per day.

When the technical college system was created in 1962, an average of eleven candidates applied for each place available at the technical colleges. In the national technical colleges the ratio of applicants to places was 17:1. However, this ratio has steadily decreased falling as low as 2.6:1 in 1971. This figure indicates a drop in quality of students since the technical colleges are now far less selective and has also

necessitated a certain amount of reorganisation. With increases in family income and a higher national rate of spending on education the technical colleges will probably find it more difficult to attract talented students since most of them generally prefer to attend a university. Yet another characteristic of the technical colleges is the fact that only about two per cent of their graduates actually transfer to universities and this does place a "terminal" label on their qualifications.

Because the number of candidates in advanced science and technology degree programmes at universities has rapidly expanded in recent years there has been an over-supply of university graduates. The whole manpower structure is likely to be affected by this development. Before World War II low-level technicians were supplied by engineering schools, middle-level technicians by engineering colleges, and high-level technicians by universities. Since the war, upper-secondary school-leavers have been recruited as prospective low-level technicians while university graduates were used as high-level technicians and when the technical colleges were eventually created their graduates filled the middle-level. However, with an overproduction at the top it is possible that many technical college graduates will be demoted to the status of low-level technician.

The technical college system is engaged in much reorganisation. Their equal distribution throughout Japan has provided opportunities for tertiary education for talented students from poor families and has helped supply the needed technical manpower for economic development. These colleges are being asked to alter the aims and content of the education they offer and they may well have to be redesigned in such a way that they can be fitted into the 6-3-3-4 single-track system. To achieve this, technical college students who have completed their third year would have to be able to apply for admission to universities and technical college graduates be allowed to transfer to the third year of the university programme.

C. Summary

Universities in Japan have traditionally been regarded as the central institutions of tertiary education, not only by the Government but also by the public in general. In spite of the fact that the non-university sector - the junior colleges and technical colleges - are now officially recognised institutions they are still regarded by many as subsidiary and not an integral part of the tertiary structure. For this reason it is really quite difficult for junior college and technical college graduates to transfer to universities although in theory such transfers are possible. What has also hindered student transfers has been the lack of Government interest in the removal of this obstacle.

Professor Shimizu has assessed the situation in the following way:

"Considering contemporary progress, however, it is unwise to draw a rigid institutional distinction between universities and non-universities, and to make it difficult to transfer from non-universities to universities. The recent rapid increase in the proportion of lower secondary school graduates going on to upper secondary schools (85% in 1971) makes it inevitable that universities and colleges in Japan will rapidly change from selective to mass educational institutions. Financial limitations may, however, make it impossible to expand universities on a very large scale. In order, therefore, to meet demands for mass higher education, a drastic reorganisation and expansion of non-university type institutions is required." (1)

In June 1971, the Central Council for Education made certain recommendations entitled "Basic Policies for the Comprehensive Expansion and Improvement of School Education". The Council stated that universities and junior colleges would enrol 32% and 15% of the corresponding age groups by

(1) Organisation for Economic Co-operation and Development - Short-Cycle Higher Education in Japan Paris: 23rd October, 1971. (Paper prepared by Professor Y. Shimizu) (DAS/EID/71.78) (pp. 12-13)

1980 or 1,900,000 and 470,000 students respectively. (Strangely enough technical colleges were not even mentioned in the Council's estimates.) The ratio of university entrants to junior college entrants was forecast as 2:1 and the number of students is expected to increase by 520,000 and 200,000 respectively. However, many of the universities are already too large to accommodate this anticipated student enrolment and new universities are prohibitively expensive. On the other hand, it would be possible to offer more places in the existing junior colleges and technical colleges since their enrolments are quite small at present. As Professor Shimizu has proposed, many new junior colleges could be established in local areas and many upper-secondary schools turned into colleges. These three types of college, plus a certain number of miscellaneous schools could then be established within the tertiary education system as "regional colleges".

If the administration of tertiary education could be made unitary, and not divided into national, public and private systems, then "regional colleges" and universities would be able to be connected organically and for the first time since World War 11, the basic ideas of the new educational system - decentralisation and democratisation - could be realised in the tertiary sector.

3. SHORT-CYCLE TERTIARY EDUCATION IN CANADA

The Canadian political structure comprises constituent units called provinces and two vast northern territories which are administered by both strong provincial governments and a strong central government. Neither the central nor the provincial governments in Canada seem willing to relinquish their historical spheres of authority and influence. An important component in this balance of power is what is often called "the French fact" in Canada's historical development. The second largest province, Quebec, is predominantly French and since she is the bastion of the French language, Quebec is very jealous of her constitutional powers, and resists attempts by the central government to

encroach on areas such as education.

The financing and control of education was solidly entrenched (under Canada's century-old constitution) in the domain of the provincial governments. Thus each province has developed its own unique system of education and the inequalities of standards and incompatibilities of curricula and credits have created many difficulties in the highly mobile society of today.

A large array of post-secondary, non-university institutions exists in Canada and of this group the three largest systems of colleges are the junior and community colleges in the western provinces, the colleges of applied arts and technology in Ontario (CAATs), and the collèges d'enseignement général et professionnel (CEGEPs) in Quebec. The junior and community colleges in the western provinces are not unlike those institutions of the same name in the United States and, since the American institution has been more closely described in another part of this thesis, it would seem appropriate to single out the CAATs of Ontario and the CEGEPs of Quebec for a more detailed examination.

A. Colleges of Applied Arts and Technology in Ontario

(a) Development

A strong public demand for community colleges did not arise until the 1950s and 1960s and one of the first authoritative statements on the subject was made in 1950 by a Royal Commission on Education which made some observations urging the establishment of junior colleges:

"....that local education authorities be required to establish and operate junior colleges, or junior college departments in conjunction with secondary schools, providing two-year university-preparatory courses, preferably in a junior college operated as a distinct unit for all studentsqualified for entrance and desiring to attend...." (1)

(1) Royal Commission on Education in Ontario: Report, 1950. (pp. 56-58)

More statements on this issue were soon made and in his Annual Report for the 1951-52 academic year, S.E. Smith, then president of the University of Toronto, elaborated on the matter:

"First, junior colleges should be clearly differentiated from degree-granting institutions of higher learning, and remote from universities. Secondly, their courses should be unpretentious in scope and thorough in execution.... Thirdly, their programmes of general education should be so planned that their courses could be terminal thus providing general education beyond the secondary school. Their programmes should embrace basic courses required for university entrance or advance standing. Thus it should always be possible for students to proceed to universities directly from secondary schools without attending junior colleges." (1)

In the press and in political and educational circles the debate ensued for and against the inclusion of university-parallel courses in non-degree-granting institutions. By 1964, the Report of the Grade 13 Study Committee was published and it supplied the rationale for legislation in the following year which established the CAATs. The Report stated:

"....we are now in an entirely different world from that of the 1920s and 1930s, and it is necessary that we extend our educational system to meet the demands of this new world. In the past....we have solved the problem of expanding our secondary school programme.... In the present crisis, the need cannot be met simply by alterations or additions at secondary school level; this time we must turn our attention to the post-secondary level, where we must create a new kind of institution that will provide, in the interests of students for whom a university course is unsuitable, a type of training which universities are not designed to offer." (2)

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- (1) Smith, S.E. - President's Report for Year Ended June, 1952. Toronto: University of Toronto Press, 1952. (pp. 3-4)
- (2) Grade 13 Study Committee, 1964: Report. Toronto: Department of Education, 1964.

In October 1965, the Legislature of the province of Ontario passed The Department of Education Amendment Act, 1965, establishing the CAATs. Their operation is based on four principles:

(i) The colleges must embrace total education, vocational and avocational, regardless of formal entrance qualifications;

(ii) They must develop curricula which meet the combined cultural aspirations and occupational needs of the students;

(iii) They must operate in the closest possible co-operation with business and industry, and with social and other public agencies to ensure that curricula are at all times abreast of the changing needs of a technological society; and

(iv) They must be dedicated to research not only in curricula, but in pedagogical technique and administration. In order to implement these long-term economic and social goals, ten regional development areas of Ontario were adopted as the basis for planning the location of colleges, twenty of which have now been established. In principle they are commuter colleges with residential facilities normally only being provided in Northern Ontario.

(b) Administration and Control

Each CAAT is controlled by a board of governors consisting of twelve members chosen from the area being served. A board is responsible to the Minister of Education and controls the development and operation of each college. A board exercises all authority in this connection excluding only those decisions made or approved on its behalf by the Council of Regents. A board appoints the president and all other staff members, establishes the budget and submits it to the Minister for approval, develops curricula and publishes information about admission, courses and fees, which have been approved by the Minister. A board is guided by advisory committees in their decisions with respect to the colleges' programmes. These advisory committees draw their members from industry, business, and the professions which are related to the particular programmes of study.

The Council of Regents consists of fifteen members appointed by the Minister of Education. The functions of the Council are to advise the Minister on all matters pertaining to the colleges; to recommend to the Minister the appointment of members of the boards of governors of the colleges; to co-ordinate the work of the local boards of governors in such matters as the setting of fee schedules, development of curricula, and so on; and to decide on a scale of salaries and wages for the various levels of college personnel.

Yet another element in the government of the colleges is the Applied Arts and Technology Branch of the Department of Education. This Branch acts as the administrative arm of the Minister of Works in close co-operation with the Council of Regents. The Branch is responsible for assessing the operating and capital budgets submitted by local boards and for making recommendations to the Minister. Another major responsibility of the Branch is to co-ordinate the work done by local curriculum advisory committees for the purposes of provincial and national certification.

"The apportionment of power and responsibility among the minister, the Department of Education, the Council of Regents, and the boards of governors has resulted in a system permitting striking diversity. 'We don't want twenty branch-bank, rubber stamp colleges in Ontario' said an official of the Department of Education. Each college appears to be developing its own identity in response to its economic and social environment and to the administrative philosophy of its president and board." (1)

In choosing this administrative pattern and in establishing the CAATs as centres for career training, the Ontario Minister of Education has acknowledged that there was no need for a structure with close administrative links to the universities, such as exists in Quebec province, since the colleges did not have the primary task of providing courses

(1) Campbell, G. - Community Colleges in Canada Toronto: Ryerson Press, 1971. (p. 38)

for baccalaureate credit. Speaking in the Legislature on May 21, 1965, the Minister of Education stated that he had not included in the list of courses to be offered at the CAATs what the Americans call the "transfer" or "college-parallel" courses leading to advanced placement in universities. There was no need, at least for the present, he added, for such courses in Ontario since the Grade 13 course and its successor, the proposed Matriculation Year, were specifically designed as a university-preparation programme for academically-able students.

(c) Consolidation Period

It is quite clear that the Minister of Education has established the CAATs to graduate students who are intended to be immediately employable in fields for which they have been trained. However, despite these clear-cut guidelines which indicated that the province would best be served by a viable alternative at the tertiary level to the existing university structure, there is still some controversy as to their exact function. Some CAATs have even introduced a three-year diploma course in general arts and science for which there are limited employment prospects. Apart from these exceptional courses the first eight years of operation resulted in a very good employment record for CAAT diplomates and the connection between the needs of the marketplace and the college curricula is both direct and obvious.

The first years of establishment have found the CAATs in a difficult position with regard to the contribution they can make towards the democratisation of Canadian society. This issue involves mainly social mobility and the relation of the colleges to the changing class structure. Some critics have not objected to the CAATs as such, but to the fact that the whole education system in Ontario results in a class system streaming process which is aggravated by the fact that the universities in Ontario virtually exclude the CAAT diplomates from admission. Writing in the autumn of 1968, T.E. Reid stated:

"The CAATs in Ontario will, unless substantial policy changes are made by the 1970s, in effect seal the fate of the

average culturally disadvantaged pupil who survives four years of secondary school in watered-down streams, particularly in the stream labelled '4 years arts and science'. The principle of 'separate but equal education' is now institutionalised in post-secondary school education in Ontario. Instead of the colour of one's skin being the distinguishing characteristic, poor or well-to-do family backgrounds become in general, the de facto entrance labels. The two plans (the secondary school organisation plan and CAATs colleges-G.C.) together, in Ontario, progressively close the door to re-entry to the top level of academic education after Grade 9 to those many teenagers who are placed at an absolute and at a competitive disadvantage because of the accident of birth." (1)

However, despite such criticisms the CAATs seem to be committed mainly to educational exploration in post-secondary, non-degree courses and they are largely vocational in response to the needs of the economy. The colleges are to fulfil non-university needs but within this general aim, ample provision has been made for the student whose interests and abilities lead him to further education. It seems that CAATs will have to yield, at least for some years, to the policy statement made by W. Davis, Minister of Education, in the Legislature in 1967:

"By what argument of common sense or sane economics could anyone justify at this time...the building of duplicate facilities in the colleges of applied arts and technology to handle one or two years of university study?"

Another issue which has faced the government in Northern Ontario has been the attempt to place CAATs within reach of these communities. Inevitably, however, the development of seven colleges in the north was brought about at high cost to the taxpayer. More serious than the accusation that the colleges are not being used is the question whether people in

(1) Reid, T.E. - "Priorities in Educational Expenditure: The Essential Basis" Dalhousie Review, Autumn 1968. (p. 338)

the north are, in fact, being well served by the colleges. In March 1970, H.M. Ross concluded (1) that very few Indians in Northern Ontario had ever been inside a CAAT since none of the colleges or universities makes an effort to recruit these school-leavers. Ross also implied that the French Canadians are not getting a fair opportunity. Although they comprise a third of the population east of Sault Ste. Marie few of them are enrolled in the colleges and universities.

However, it would appear that the peculiarly difficult challenges of geography and population scarcity occur in tertiary education throughout Canada's north.

Since Canada is at present going through a protracted period of high unemployment which is affecting workers in all categories, the resulting temporary surplus of blue and white collar workers has affected the employment picture for both college and university graduates. However, a major source of strength in cementing the relationships between the CAATs and industry and business has been the creation of professional advisory committees to the boards of governors and presidents of the colleges. Advisory committees have generally been established in most of the professional-vocational programmes offered in the CAATs. They are run by acknowledged leaders in the respective businesses and industries and they meet frequently to offer advice to the colleges regarding curriculum and other matters. These people automatically become ambassadors in their fields on behalf of college diplomates and much of the immediate employment success experienced by CAAT leavers has been largely the result of the advisory committee system.

(d) Summary

The relationship between the CAATs, the government, and the universities, has been clearly stated by Douglas Wright

(1) Ross, H.M. - "Higher Education in the North: Does it Serve Regional Needs?" The Globe and Mail, Toronto, March 21, 1970. (p. 1)

in a recent publication:

"Reflecting the Government initiatives that caused the CAATs to come into existence, the style and character of the relationships between the colleges and Government and its agencies are different from those relating to the universities with their autonomous tradition in being somewhat more centralised." (1)

The Ontario CAATs can be said to constitute, with the universities, a binary system since both institutions stand side by side with different rôles and activities without either serving consciously as a feeder for the other. Questions of transfer (and advanced credits) do naturally arise, but, up to the present, no very formalised processes for transfer have been developed and judgements are made on individual cases. It seems likely that more formalised processes of some sort will become essential.

The CAATs were brought into being in direct response, in part at least, to the demands of industry and business for people specially trained and skilled at the post-secondary level who would be immediately employable once their studies were completed. Although this demand did not exist in an organised way, its existence in 1965 cannot be denied. Thus it was only a matter of time before a large number of validating bodies and professional and vocational associations gave official recognition to CAAT diplomates by establishing specific categories based on their particular qualifications. This list is growing steadily and already an impressive number of such bodies has stated its preference for CAAT diplomates in certain areas of their activities.

Throughout the continuous process of curriculum development, the CAATs have co-operated with representatives of business and industry in order to receive as much direct and accurate information as possible from the future employers.

(1) The World Year Book of Education 1972/73 - Universities Facing the Future (Joint Editors: Niblett, W.R. and Butts, R.F.) London: Evans Brothers Ltd., 1972. Article by Douglas T. Wright - "Recent Developments in Higher Education in Ontario" (p. 300)

Where certifying bodies and standards exist the CAATs have made an effort to comply with their norms in order to ensure that students will qualify for certification upon graduation. This is equally important in such diverse areas as accounting and aviation, law enforcement and nursery school teaching. Whether the standard is the number of hours spent in a laboratory or the number of hours of solo flying, the CAATs have tried to help students meet, and even exceed, the minimum requirements for their respective certification.

This does not imply that the curricula at CAATs are controlled by outside agencies but rather demonstrates the close relationship which exists between a career-oriented post-secondary institution and the employing agency. It also indicates that education for careers does not take place in academic isolation. As William Newnham stated in a recent OECD publication (1) :

"In short, dramatic progress has been made in a relatively short period of time in establishing the credibility amongst employers of the community college (CAAT) diploma. Needless to say, there are still many problems to be overcome and many challenges not yet fully appreciated - perhaps chief among these the problem of the limitation of upward mobility once successfully placed and the concurrent problem of maintaining currency in the light of continuing technological development. These and other fascinating opportunities for the exercise of academic and administrative creativity lie unanswered on the immediate horizon for the community colleges of Ontario."

There had been substantial changes in the processes and structure of tertiary education during the 1960s and at the end of that decade the Government of Ontario as well as many people concerned with the colleges and universities came to realise that some general overview should be undertaken

(1) Organisation for Economic Co-operation and Development - Problems of Employment for Graduates of Short-Cycle Higher Education in Canada: CAATs in Ontario and CEGEPs in Quebec Paris: 25th October, 1971. (DAS/EID/71.50) (p. 12)

relating to the accomplishments and growth of the 1960s and the needs for the 1970s and 1980s. For this reason a Commission on Post-Secondary Education was established with broad terms of reference to study the whole sphere of post-secondary education in Ontario.

The Commission has now completed much extensive research and its final report entitled The Learning Society was published in February 1973. It remains to be seen what impact the recommendations of this Commission will have on the CAATs.

B. The Collèges d'Enseignement Général et Professionnel (CEGEPs) in Quebec

(a) Development

The roots of the CEGEPs are mainly to be found in the church-related classical colleges, technical institutes, and normal schools, scattered throughout the province. According to a Department of Education publication (1), in the year 1966-67 there were five parallel systems:

(i) There were ninety-six classical colleges, eighty-one of which offered college-level (university) instruction. A number offered courses leading exclusively to university entrance; none included vocational training.

(ii) Some thirty-five institutions offered courses in homemaking.

(iii) In the system of technological institutions there were five different categories accounting for forty-seven institutions.

(iv) The normal schools were very diversified and included Protestant, Catholic, French and English-language scholastics for male and female members of religious orders, state and private normal schools, and so on. Despite great reductions in numbers there were still sixty-one normal schools in 1967.

(1) Quebec, Department of Education: College Education and the General and Vocational Colleges Quebec: The Department, 1968. (pp. 18-24)

(v) In addition to these non-degree-granting institutions the universities traditionally offered programmes which have now been transferred to the CEGEPs.

In this same publication (1) the situation was described as follows:

"From this description, there emanates an impression of incoherence and anarchy: watertight divisions between pre-university training and vocational training; a multiplicity of administrative and pedagogical systems; a repetition of numerous subjects; a variation in entrance requirements at university level, between sectors and even within a single sector. All these disadvantages result from the fact that five parallel systems occupy the field of college education. The two chief disadvantages....are confusion and inequity.... and a waste of resources...."

This then was the context within which the CEGEPs developed.

The Royal Commission of Inquiry on Education (often called the Parent Report after its chairman) was established in March 1961. In 1963 it visited educational institutions at all levels across Canada, in the United States, Western Europe, and Moscow. The first volume of the Parent Report, which was published soon afterwards, led to the establishment of the first Ministry of Education in 1964. The first and subsequent volumes of the Report laid a foundation upon which the CEGEPs could be founded since it stated amongst other things that:

"....such a scattering of institutions was no doubt able, in days gone by, to meet the needs of families in the country and in small towns who thus had close at hand some institution in which their children might continue their studies." The Report recommended that:

"....there be established a level of education complete in itself, of two years duration, after the eleventh year, which

(1) Quebec, Department of Education: College Education and the General and Vocational Colleges Quebec: The Department, 1968. (p. 26)

shall be clearly separate from both the secondary school course and higher education."

"....it shall be the preparatory stage required for higher education, in the case of those intending to continue their studies, and, for all others, a terminal phase in general education and vocational training, preparing directly for a career." (1)

At these "institutions" all students who intend studying at a university should devote at least two years to pre-university study before being admitted. Universities were requested to relinquish general and vocational instruction at this level and all institutions beyond the eleventh year such as universities, classical colleges, institutes of technology, private colleges, vocational schools, "instituts familiaux", schools of art and of music, were asked to co-operate in the formation of the institutes. (2)

The Commission's proposals were far-reaching since they were requiring some two hundred institutions, which in one way or another embodied the very fibre of French-Canadian culture and were responsible for its transmission, to regroup and assume new objectives and clientele under a new management. The universities would have to give up certain fields of instruction which have traditionally been theirs. Other institutions would have to lose some part of their identity and become integral parts of larger wholes, and some private institutions would have to transfer to the public sector some of their freedom of action. However, many of these institutions were already at the stage of losing some of their former individual liberty since the private system simply had not the means to continue as previously.

(1) Royal Commission of Inquiry on Education in the Province of Quebec: Report Vol 11 Quebec: Printed for the Government of the Province of Quebec, 1965. (p. 161, para. 260) & (pp. 368-369)

(2) Ibid. - (p. 161 para. 260)

The recommendations made in the Parent Report quickly and profoundly altered the structure and process of the entire tertiary education system of Quebec. The planning committee needed to implement the proposals of the Report consisted of representatives of parents, school boards, teachers, classical colleges, and universities. They worked for about eighteen months from January 1965 to June 1966, preparing legislation for the creation of the CEGEPs (the name "institute" had been changed by the committee to "Collège d'Enseignement Général et Professionnel".)

Nowhere in Canada has a type of community college system come into existence so speedily and with such carefully predetermined position. The philosophy, structure and process of the creation of CEGEPs were clearly defined and the guidelines for their operation framed. Blueprints were drawn indicating how the colleges would articulate with the universities and the secondary schools while at the same time meeting the sociological and technological requirements of the province.

The General and Vocational Colleges Act establishing the colleges was assented to on June 29, 1967 and in September 1967, there came into being the first twelve of the thirty-eight colleges at present in operation. All these initial colleges used existing facilities and were formed by the conversion of one or more existing institutions in a wide range of combinations, for example, the CEGEP de Trois-Rivieres is an integration of nine different establishments.

The Ministry of Education did not create the CEGEPs directly but the initiative came from the co-operating institutions themselves and from within the communities.

(b) Administration and Control

Each CEGEP has a board of directors consisting of nineteen members, including four named by the academic staff, two by the students, and four drawn from among parents of the students.

In order to allow for maximum community participation, provision is made for five other board members to be appointed

only after consultation with other community groups. The board itself may recommend to the Minister the appointment of two additional members in order to ensure a proper balance between community and college representation. The principal and academic dean are also members. Thus we can see that the term "community college" as used in Quebec is particularly apt, since in planning as well as in management a lively sense of community involvement has been established.

There is a Directorate of College Education (1) to control the provincial co-ordination and administration of CEGEPs at the ministerial level. In Quebec as in other parts of Canada, there is a need to maintain a reasonable balance between maximum community involvement, flexibility, and autonomy on the one hand, and centralisation, co-ordination and control on the other. One of the functions of the Directorate is to ensure that a programme with a limited market is not offered by a large number of colleges. The Directorate is a centre which co-ordinates the employment schemes for CEGEP graduates organised by the federal and provincial Departments of Labour, Manpower and Immigration, and Education. The Directorate is therefore both a management and a co-ordinating centre, facilitating, for example, the diffusion of information on such problems as certification, transfer and equivalence of graduates, and student guidance. The Directorate is making a special effort to adapt the various training programmes to the needs of industry and trade. (2)

Each college is responsible for engaging its own personnel and for interpreting the admission regulations set by the Department of Education. The provincial governments bear the operating costs of the colleges while costs relating to room and board, recreational activities,

(1) "Direction Général de l'Enseignement Collégial" (DIGEC).

(2) A Commission of Education has also been created, composed of civil servants, and representatives from the Chambers of Commerce and Industry, as well as from private enterprises. This Commission also co-operates with such bodies as the Association of Community Colleges of Canada.

transportation, and continuing education, are expected to be self-supporting. Students are not charged tuition fees.

(c) Consolidation Period

The CEGEPs admit all students who have completed eleven years of schooling, and offer two courses:

- (i) Two years of general pre-university education, leading to a Diplôme d'Etudes Collégiales, which allows entrance to a university; and
- (ii) Three years of vocational education.

In 1967, the year of establishment, 13,500 students were admitted, of whom forty per cent went into vocational education. However, the plan at that time was to admit sixty per cent of the students into vocational courses. An intensive effort was made to inform and guide candidates and by 1971, when 75,000 full-time students were enrolled in the CEGEPs, the number had risen to fifty per cent. The intention of the authorities is to raise this figure to seventy per cent by setting up new technical training schemes.

The first diplomates emerged from the CEGEPs in 1970 and the very newness of the institution and diploma made it difficult to assess the quality of the courses. Since forecasts on manpower requirements were still inadequate at this stage many diplomates had been inadequately counselled and false expectations raised. The first diplomates were faced with very unfavourable economic conditions and in June 1970, when these young people entered the business world the unemployment rate stood at 9.2% (one of the highest in Canada). Jobs were even more difficult to find since the United States had just created new immigration laws and in Canada a serious political situation existed in the autumn of 1970.

Little serious effort had been made in the early years of the CEGEPs to co-ordinate their work with that of industry and the emergent diplomates found that training did not always meet the quality demanded by employers. As Jacques

Fournier of the Association of Canadian Community Colleges stated:

"It is quite clear that an effort of co-ordination is essential, and the rôle of the federal or provincial Departments of Labour, Manpower and Immigration, as well as of the Education Departments, must be to facilitate the entry of graduates into the production system. This is all the more necessary since the labour market is federal as well as provincial, and Quebec's special position often makes co-ordination difficult between the two levels of government." (1)

The assumption that CEGEPs could supply technicians neatly fitting into the hierarchy between engineers and semi-skilled workers, soon vanished. Since these diplomates had a limited breadth of qualification, employers had to adapt their recruitment policies to accommodate the wide range of specialised training offered by the CEGEPs (64 courses altogether). Employers have helped to solve some of the problems of employment of CEGEP diplomates by means of informal but close contacts between themselves and certain colleges, which were mostly organised by the DIGEC. In this way employers could keep themselves informed on the content and organisation of the courses and they could also specify their needs.

Inasmuch as their reputation was at stake, the colleges have been greatly concerned with solutions to the problem of employment for their students. In many instances the vocational and pre-university sections of a college have been re-structured and colleges have established more comprehensive guidance services in order to help identify the expectations and aspirations of students. CEGEPs have also conducted publicity campaigns using a variety of approaches not the least of which has been the setting up of industry/college

(1) Organisation for Economic Co-operation and Development - Problems of Employment for Graduates of Short-Cycle Higher Education in Canada: CAATs in Ontario and CEGEPs in Quebec Paris, 25th October, 1971. (DAS/EID/7150) (p. 15)

committees whose primary task is to promote jobs for diplomates.

(d) Summary

In sum, then, the CEGEPs are an important structural innovation in Quebec's tertiary education system. The difficulties facing these new colleges must be placed in the perspective of historically created circumstances. Language and cultural traditions, as well as other barriers, make it less easy for outsiders to appreciate all the dimensions of these conditions and feel about them as French-speaking Canadians in Quebec do. The sociological context in which the CEGEPs were created must be considered, especially, for example, the traditional separation of academic and vocational-technical education.

The CEGEPs are the outcome of an effort to modernise and develop education in Quebec and their original feature is that they provide both vocational and pre-university courses thus offering an intermediate as well as a terminal type of education. Since these institutions are relatively new and Canada has been going through a protracted period of high unemployment, a meaningful evaluation of their worth and significance is difficult at this juncture.

4. THE JUNIOR COLLEGE IN EUROPE

A. Introduction

The only colleges in Europe which are identical in function and purpose to the American Community Colleges are those controlled and organised by Americans as remote campuses of American-based colleges. The only essential differences in these institutions are that they have many foreign staff members and that they use a number of European countries as the setting for their campus and study.

An example of such a college is the American Junior College of Barcelona, Spain, which opened in September 1971. This coeducational two-year college is centrally located in Barcelona and the students are housed with private Spanish families. The courses offered all lead to the Associate in

Arts degree which forms a bridge to senior studies at colleges in the United States. This college has been created in order to fill a need for hundreds of school-leavers each year from American (1) and English-speaking international high schools all over Europe.

There are many examples of short-cycle tertiary educational institutions in Europe which are not identical in structure to American Community Colleges but which have clearly been influenced by this institution and have adapted concepts suitable for their particular cultural and educational milieu. Inevitably in a study of this length some countries will have to be excluded and from the diverse European spectrum a selection of institutions will be briefly examined. The countries described have been chosen because each illustrates a particular stage of development in the movement towards post-secondary institutions and mass education at the lower tertiary level, and because their adaptations to the needs resulting from the upsurge of young people present constructive and useful studies for other nations to consider.

Great emphasis has been laid on the United Kingdom since it illustrates a nation which has traditionally clung to an elitist tertiary educational system but which is being forced to devise and consider other solutions to the demands made by large numbers of school-leavers and to a changing political, social, and economic climate. No longer is higher education in the United Kingdom regarded as the preserve of the few destined to be leaders. For this reason and because England typifies the dilemma which faces many elitist European systems, a deeper study has been made of that country and of the development of a short-cycle tertiary educational concept which has recently manifested itself, namely, the Diploma of Higher Education.

(1) A large number of young Americans spend many years in Europe attending school. They are predominantly the children of armed forces personnel who form part of the occupying forces in countries such as West Germany.

Quite apart from American Community College influence which is strong in Europe, although not always acknowledged openly, the deep-seated need for alternative degree patterns or shortened degree structures has been in evidence and will be evaluated where it impinges on short-cycle tertiary education. The growing amount of liaison and co-operation between university and non-university institutions throughout Europe is yet another easily distinguished post-World War II development and this increase in vital links between hitherto completely separated sectors also deserves special attention.

B. England and Wales

(a) The Sixth-Form College and Junior College

(i) The Place of the Sixth-Form

The sixth-form has long been an accepted form of upper-secondary education at some schools in the United Kingdom but the concept of a sixth-form college is a more recent development dating from the early 1960s.

As A.D.C. Peterson recently stated, the term sixth-form is becoming more and more ambiguous and for this reason needs to be clearly explained. Two official definitions of the English sixth-form provided by the Schools Council and by the Department of Education and Science are as follows:

"....all pupils who stay on at school beyond the academic year in which they reach the age of 16, together with all younger pupils who have begun GCE 'A' level courses."

"The term Sixth Form should be interpreted as groups of pupils taking courses at a level wholly or mainly beyond GCE 'O' level, whether or not the course prepares pupils for the GCE 'A' level examinations." (1)

When one considers the range of present types of sixth-form the inevitable question must be asked: does the sixth-form belong entirely to the secondary stage or could it be

(1) Peterson, A.D.C. - The Future of the Sixth Form London: Routledge & Kegan Paul, 1973. (pp.2-3)

included in the range of education known as short-cycle tertiary education? The sixth-forms which are formed in the four ways described below could, quite reasonably be classed in the category beyond secondary education, since the young people involved have normally completed their formal secondary education and belong to the same age group as the youngest entrants to many American Community Colleges:

- (i) Two or three years in a separate, academically-selective institution often called a "sixth-form college";
- (ii) Two or three years in a college of further education;
- (iii) Two or three years in a college combining further education and upper-secondary education;
- (iv) Two or three years in a separate non-selective institution sometimes called a "junior college".

Other forms of sixth-form are more likely to be placed in the secondary sector since they are an integral part of a secondary school.

Support for the placing of some sixth-forms in the tertiary sector comes from more than one writer. For example L.C. Taylor in writing about two well-known community (junior) colleges in the United States equates them with English Sixth-Forms:

"Oakland and Golden West are both junior colleges - in our terms, sixth form colleges plus the equivalent levels in technical colleges." (1)

A.D. Edwards concludes an interesting book on the English Sixth-Form with these words:

"What is happening in the sixth forms of some comprehensive schools and in such places as Mexborough is a long stride away from the tradition of retaining at school only a minority on whom stringent academic demands can be made. The American junior colleges began life as preparatory departments for the universities. They came to offer a complete range of academic, vocational and general work to a large majority of the age-group. This country may be moving slowly in the same

(1) Taylor, L.C. - Resources for Learning (Second Edition) Harmondsworth: Penguin Books, 1972. (p. 72)

direction, making the years 16-18 a natural 'third' stage of education." (1)

A.D.C. Peterson also provides added weight to the argument that the sixth-form is not unlike the short-cycle tertiary sector of education in some countries, more particularly the United States. He writes:

"If we rule out the possibility that every all-through secondary school should have its own sixth form, we are left with a choice between five patterns, the thirteen- or fourteen- to-eighteen upper school, the 'mushroom' sixth form growing out of one secondary school, as at Mexborough, and taking in pupils from a satellite group of eleven-to-sixteen schools, the selective 'academic' sixth form college, the unselective 'general' college, and the combination of sixth form and further education, in what might be called, in American terms, the community college." (2)

An important issue in this brief examination of sixth-forms which seem to belong partly to secondary and partly to tertiary education is one which has been neglected until very recently, namely, the relationship between schools and colleges of further education. Recent developments at Exeter provide an example of this relationship. Although the Exeter scheme will only operate fully from 1973, the college of further education took in its first group of sixteen-plus students in 1970. Thus it came about that in Exeter a single, unitary college (or "junior college" as it has come to be called) for all students, both full-time and part-time, came into being. These students are offered both typically vocationally-orientated courses and the more academically-directed courses typical of sixth-forms. In addition young people wishing to continue in education without either of these objectives are also catered for.

The developers of this scheme have carefully considered

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- (1) Edwards, A.D. - The Changing Sixth Form in the Twentieth Century London: Routledge & Kegan Paul, 1970. (p. 107)
- (2) Peterson, A.D.C. - The Future of the Sixth Form London: Routledge & Kegan Paul, 1973. (pp. 66-67)

the implications of the college acting as the single centre for all post-sixteen studies, particularly as regards providing for the fusion of the best elements of the "sixth-form ethos" in the college. New areas of curriculum have been developed. Some established curriculum areas have been enriched to support the ideals of scholarship. The result is that the college is able to offer an immensely wide variety of courses ranging across the whole spectrum from specifically academic to specifically vocational. (1)*

(ii) The Concept of a Junior College

The Crowther Report (1959) provides some of the first authoritative references to the concept of a junior college in England. This concept is discussed in three sections of this report, namely, paragraphs 622, 624 and 692.

In asking whether education in England has all the elements that are needed to make a suitable provision for the full-time educational needs of 16 and 17 year-olds, the Crowther Committee, wondered whether there was a missing piece. They put the following question:

"Is there a case for a Junior College which would be essentially a full-time institution without part-time students? What we have in mind is an institution with the adult atmosphere of a technical college but with a much wider range of curriculum. We do not think of an institution of this kind as starting before the end of compulsory attendance or thereabouts, nor as continuing beyond, say, the age of 19. As we see it, there would be a wide range of practical courses....and also of academic courses roughly parallel to those that are found in the Sixth Forms of schools. There would also, we hope, be room for courses that were not tied to examinations and regulations, but exist just because they provided a good education.... There

(1) Benn, C. and Simon, B. - Half Way There (Second Edition) Harmondsworth: Penguin Books, 1972. (pp. 300-302)

*This arrangement is distinctly similar to the range of courses and the approximate standard of achievement in many American Community Colleges.

would, we hope, be access from the Junior College to further education of all kinds as well as to employment.... We do not, then, think of a Junior College as replacing Sixth Forms, but as standing side by side with them, providing an alternative form of education...." (1)

The case for the junior college has been powerfully argued since the mid-1960s on educational, as well as "cost-effective" terms. Both in terms of teachers and buildings it is evident that it permits rationalisation of the use of resources, and, as has been seen, several authorities are encouraging co-operation between separate institutions. However, some argue that the single junior college has added advantages. As D.E. Mumford, for many years its most ardent supporter, has stated:

"If the educational system is to be reorganised, then the undesirable social and educational aspects of selection at eleven-plus must not be allowed to reappear at a later stage." (2)

Sixth-form colleges which concentrate on full-time academic studies, whether selective or open access, do imply "separateness" or the creation of two streams for sixteen-plus students. The junior college, it is implied, provides the means by which this can be overcome.

Wearing King, formerly Chief Education Officer of Croydon, has recorded the original concept of the junior college in the Croydon Education Scheme (1957) in a recent book. In summarising the Croydon proposals King mentions those who would justify higher education at an academic standard (and who would be regarded either as prospective university students or at least pursuing a similar course) and states that they would be provided for in a junior college, designed, equipped and staffed especially to meet their needs. (3)

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- (1) Great Britain - 15 to 18 Report of the Central Advisory Council for Education - England. Vol. 1 London: HMSO Ministry of Education, 1959. (p. 423)
- (2) Mumford, D.E. - "The junior college" Forum Vol. 7, No. 2, Spring 1965.
- (3) King, W. - The English Sixth-Form College Oxford: Pergamon Press, 1968. (p. 143)

The idea of discontinuing the practice of making sixth-form provision in each of the grammar schools in the borough, and in its place to collect the pupils together into a single junior college, had thus been carefully planned.

(iii) Sixth-Form College Experiments

Experiments which follow the sixth-form college pattern are not many, and their settings are diverse. One such experiment is the first Atlantic College (1962) situated at St Donat's Castle at Llanwit Major in Glamorgan. The concept is at first of an international boarding college for a two-year pre-university period. This college has long entertained the thought of an international baccalaureate but the problems of establishing this concept in Britain are immense in view of the determined individualism of the universities. (1) At Atlantic College there are no younger pupils to hinder the sixth-formers and pupils of both sexes can take part in a lively intellectual and collegiate life together.

At Mexborough in Yorkshire in 1964 the West Riding Education Committee decided not to extend the Mexborough Grammar School in a conventional way but to make of the sixth-form a separate unit with a distinctive discipline and with premises to which the children from lower forms were not to be given access. The sixth-form unit takes any pupils staying on after the fifth-form, whether or not they are of academic turn of mind, and whether or not they intend taking an external examination.

One of the reasons for the creation of the unit was that the sixth-form had traditionally been geared to the pre-university and pre-education college course, and it was not offering anything to those who wished to continue their studies but had no great academic ambitions. Although

(1) The work of A.D.C. Peterson comes to mind here, more particularly The International Baccalaureate (1972) which is a description of the new sixth-form programmes and examinations developed in international schools.

technical colleges usually provide for such pupils, they do not always fulfil the students' instinctive liking for a collegiate way of life. However, since the Mexborough sixth-form unit is not classified as a further education institute, but is still theoretically a school, it is not possible, as yet, to offer full-time national diploma courses. This type of unit does literally straddle the secondary and lower tertiary sectors in many ways and a dilemma is created which is easily resolved in some countries by the earlier promotion of young people to institutions of short-cycle tertiary education.

At Mexborough traditional classroom desks are not used at all and the centre of life of the unit is a large pleasant common room and a student's council room. Make-up and jewellery are allowed, and hair styles are not subject to regulation and even the occasional beard is seen. Could such an institution not reasonably be regarded as transcending the secondary school area and belonging more to lower tertiary education?

In Luton the existing boys' grammar school became a mixed sixth-form college (1966). The qualification for admission is broadly a potential of two "A" level subjects and only pupils who intend to attempt these examinations are allowed to enrol. As at Mexborough, a college council has a growing control of school affairs. At Luton College the two sexes arrive in a common institution at about 16 for the first time in their secondary school career, unlike Mexborough where the contributing schools are coeducational.

(iv) Summary

In sum it would appear that sixth-form colleges and junior colleges have been both commended and condemned. They have been praised as the best compromise between postponing selection and preserving standards of academic excellence. They have been denigrated as institutions which may involve too much freedom, offering immature minds a pseudo-adult atmosphere, and as being incompatible with a truly comprehensive system because they merely delay the

separation of the academic from the non-academic.

These colleges have developed in three fairly clear patterns. Firstly, it was the intention at Croydon's Addington College to concentrate on "A" level courses while the Sixth-Form College at Luton did exclude some applicants not thought suitable for academic work. However, this first variety, that is, an overwhelmingly academic sixth-form is becoming untenable in many grammar schools, and is being actively rejected in comprehensive schools. (1)

Secondly, sixth-formers can be absorbed into an institution resembling the American Community or Junior College, offering a wide range of programmes. This is the type of pattern followed at Mexborough, where the college is open to all who wish to take a course whatever their previous educational history and qualifications and where the work can be directed towards "A" or "O" level achievement, some vocational goal, or be without any immediate examination objective.

Thirdly, and the most radical change, is the fusion of sixth-form and further education. In several areas, for example, in Exeter and Barnstaple, plans for comprehensive reorganisation include the transfer of all sixth-form work to the local technical colleges. These plans have met with great opposition and certainly involve considerable problems since the schools and technical colleges have evolved along different lines. The technical colleges have usually not emphasised sport, pastoral care and "community spirit", and this third solution is an interesting attempt to bridge the secondary-tertiary gap.

Strong support for this third pattern came in February 1969, from Professor W.H.G. Armytage of Sheffield University when he stated in a lecture at the Royal Society of Arts that the fusing of further education and sixth-forms into some kind of junior college is inevitable. While

(1) Edwards, A.D. - The Changing Sixth Form in the Twentieth Century London: Routledge & Kegan Paul, 1970. (pp. 105-107)

admitting that the arguments against this fusion were formidable, Professor Armytage felt that it would be a move towards breaking down the barriers between the "academic" and "applied" students as represented by those taking "A" levels and those taking Ordinary National Certificates and Diplomas.

The development of sixth-form colleges and junior colleges could possibly be regarded as the English attempt to resolve the problems of larger numbers of young people moving up the educational ladder. They are a foretaste of the developing trend towards short-cycle and mass tertiary education in a hitherto highly selective educational system and culminate in the recent development of the drive towards a Diploma of Higher Education and other changes in the degree structure of universities, polytechnics and colleges of education and colleges of further education.

(b) The Leicestershire Community Colleges

(i) Origin and Development

The concept of the Leicestershire Community Colleges was first outlined in the "Leicestershire Scheme for Further Education and Plan for County Colleges" which the Local Education Authority was required to submit to the Minister of Education in accordance with the terms of sections 41-3 of the 1944 Education Act. (1) At this early stage in the development of these colleges the term "county" college was used but the Ministry of Education requested a change and in 1953 the term "community college" was officially adopted by the Leicestershire Education Committee.

In the term community college, the word college expresses the educational bond. This means that a college will always find itself in association with an educational institution, generally a secondary school, and that under such circumstances the adult community can use the total school facilities when these are not being used by the school.

(1) Fairbairn, A.N. - The Leicestershire Community Colleges
London: National Institute of Adult Education,
October 1971. (p. 5)

One of the significant differences in the college conception from the ordinary evening institute lies in the provision of purpose-built buildings for adults and wherever possible for specific accommodation also for youth. The extent and nature of these independent facilities have been limited by the strict rationing of money available for educational building by the central government during the last thirty years. (1)

The first community college was established in the mid-1950s after the acceptance of the "Scheme for Further Education" by the Ministry of Education in 1951. It was known as Ivanhoe Community College and was situated at Ashby-de-la-Zouch. The first headmaster and warden of this college had acquired some experience in one of the Cambridgeshire village colleges and his experience in that county provided a sound basis for the new venture.

Initially at Ivanhoe there were no purpose-built community facilities but by 1958 an adult wing had been added comprising a common room with coffee bar, lecture room and office for the tutors. Only in 1964 was a youth wing built and physically integrated into the buildings. Gradually the local inhabitants became involved, local societies affiliated to use the premises for activities and meetings and a flourishing programme of evening classes was started.

The second community college was launched at the new Hind Leys Secondary Modern School at Shepshed but this time there was local experience to draw on. Ashby and Shepshed, although similar, each developed an individuality of its own since Ashby is a county market town with very little industrial development and Shepshed is a large industrial, artisan village.

The programmes presented at the Shepshed college were down to earth with handicrafts for men and women, cookery, sports, and the provision of a home to the local Charnwood

(1) Fairbairn, A.N. - The Leicestershire Community Colleges
London: National Institute of Adult Education,
October 1971. (p. 11)

Players, to the toastmaster's club and later to the town's youth club. The efforts of adult students, parents and teenagers in building a swimming bath and raising funds by fêtes, sales and other functions represents the success which can be achieved when a community college responds to local needs.

Since the advent of Ashby and Shepshed Colleges, twelve more have been established and new colleges are planned and shortly to be built at Syston, Loughborough and Hinckley, all resulting from the opportunities provided by new secondary schools.

(ii) The Underlying Rationale

The community colleges have been designed so that maximum use can be made of the total facilities of school, adult and youth wings, whether in school hours or out of them. In other words the college can be regarded as a base wherein all members of the community can be involved in their own education. The development of comprehensive secondary schools and the tendency to stay longer at school (1) have brought about the need to examine closely the overlapping functions of school and youth work and also the functions of technical and art education since all these are attempting to cater for the sixteen to nineteen year old.

With the implementation of the Leicestershire Plan for comprehensive secondary education all children will pass from the middle-school tier at fourteen, to the higher tier, the upper-school, where they will remain at least until the age of sixteen but increasingly to seventeen and eighteen. The community colleges were created before this form of secondary education was conceived of. In the late 1940s when Leicestershire was bipartite, with grammar and modern schools, it was inevitable that community colleges were attached to the modern schools since grammar schools were aloof from the man in the street and concentrated on

(1) The compulsory school-leaving age was raised to 16 in the United Kingdom as from 1972.

academically-gifted pupils. For this reason the larger evening institutes were established at the modern schools and, as occasion offered, developed into community colleges.

The recent erection of two new upper-schools which are also to become community colleges has presented an opportunity to think afresh from first principles and the following are some of the ideas which have been incorporated into the planning:

(i) That the buildings be so designed as to be available for use by all those over the age of fourteen at all times of day, whether or not they are in full-time schooling;

(ii) That, while compulsory education will necessarily influence the design of much of the building, as much opportunity for freedom of choice of activity be incorporated into the design;

(iii) That members of all age groups coming to the community college shall have, within reason and the bounds of possibility, equal opportunities and parity of esteem;

(iv) That the college shall enjoy administrative unity, and that staff be appointed whether upon a further education or other basis, by virtue of their over-all interest in the activities and life of the college as a whole. (1)

The resultant planning has been for adult, youth and sixth-form areas integrated around a central restaurant area since all three components require this facility at different times throughout the day up until 10 p.m.

(iii) Programming and Staffing

It would be unrealistic to expect identical opportunities to be offered throughout the year at all colleges, since each is designed to meet the leisure-time and cultural needs of its community in its own way, and these needs vary considerably according to the nature of each community. The relative size of the community's population, whether it is in an urban or rural area, the number of social or

(1) Fairbairn, A.N. - The Leicestershire Community Colleges
London: National Institute of Adult Education,
October 1971. (p. 18)

recreative organisations already in existence, are but some of the factors which affect programme decisions. Despite these variable factors, all colleges offer, mostly in the evening but also increasingly during the day, recreative and leisure-time classes which may range from Arabic to yoga; they make their facilities available to voluntary clubs and societies who wish to affiliate; they sponsor their own clubs, arrange special cultural and social events (celebrity concerts, lectures or visits to places of interest at home or abroad) which may or may not be linked to a session's programme of classes or club activities. Some colleges also provide day-care facilities for small children.

Several colleges also provide youth centre or club facilities, a local public library branch, or swimming pool. Throughout the year colleges arrange dinners, dances and other similar social events connected with the college or its affiliated associations.

Yet another element in college provision comes from the "Responsible Bodies" i.e. the extra-mural departments of the universities of Leicester and Nottingham and the East Midlands district of the Workers' Educational Association. The colleges work closely with them and rely on them as providers of classes in liberal studies such as philosophy, economics, politics, religion or literature.

The potential of the colleges is considerable for putting people in touch with opportunities, sources of general information, counselling and guidance services and just straight-forward general knowledge.

College classes are almost exclusively taken by part-time teachers, though the tutors themselves teach or take groups for a variety of activities. In order to maintain a high standard, teaching staff for more than half the major subjects are employed only from the County's panel of part-time teachers. The training of these teachers is undertaken for the County on a three-year basis for one-and-a-half days a week by the Loughborough College of Art and Design in conjunction with the Nottingham University Department of

Extra-Mural Studies and Loughborough Technical College. (1)

(iv) Summary

The use of school buildings out of school hours to meet the needs of the community has long been a feature of the educational system in the County of Leicestershire. Since the Second World War the County has been establishing a network of "community colleges" based to a large extent on the pattern pioneered by Henry Morris in Cambridgeshire before the war, during the 1930s.

In their early stages they were established at secondary modern schools by the addition of adult wings, and later, as they became possible through the Youth Building programme, youth wings were added too. Under the bipartite system it had not been possible to establish these colleges at grammar schools since they had always concentrated on serving the academic elite. As the Leicestershire secondary modern schools became middle-schools and the grammar schools were transformed into comprehensive upper-schools, the notion of upper-schools becoming community colleges became more acceptable and more logically desirable.

As Stewart Mason has stated in his description of how an ancient grammar school, Bosworth School, was transformed into a completely new Upper-School and Community College which opened in August 1969:

"By the time the Bosworth School was being designed the policy of establishing them (i.e. community colleges) at upper schools, wherever they were appropriately situated, had become generally accepted, and adult and youth provision were incorporated in the plans right from the start. Though both the youth and adult provision at Bosworth are no longer 'wings' but are fully incorporated within the building as a whole, they are nonetheless still separately indentifiable. By the time we had got to Countesthorpe (the second school to be planned from scratch, as was Bosworth, and which opened in

(1) Fairbairn, A.N. - The Leicestershire Community Colleges
London: National Institute of Adult Education,
October 1971. (p. 18)

1970) we had decided to incorporate all these facilities along with the sixth form into one total complex." (1)

The community college can create a type of link with the school by introducing its pupils to opportunities for the continuance in an adult context of those studies and activities enjoyed at school, and at the same time open their eyes to new ones.

The generation gap, the teenage culture and the antipathy of many adults towards young people are phenomena of the last thirty years and the creation of more youth clubs since 1960 has not decreased the gap noticeably. The community college is opposed to the segregation of youth and adults but it does not believe that a continually activated mixture of old and young provides the solution. There must be independent meeting places for both youth and adult components yet at the same time they can also be common meeting grounds.

A great deal of misunderstanding between generations arises from unfamiliarity with each other and the opportunities which the college offers each group, both to pursue common interests and to meet informally, provides a natural bridge to mutual understanding. The proximity of youth and adult work in a community naturally leads to a flow of assistance with each other's projects.

(c) The Reform of Higher Education

(i) The Structure of the First Degree - Some Proposals

The National Union of Students (NUS) presented a memorandum to the Robbins Committee during July 1961, which was described by Lord Robbins as "excellent....well-reasoned and sensible....that traversed in an illuminating way" most of the subjects that concerned his committee. Paragraph 33

(1) Rogers, T. (Editor) - School For The Community "The Leicestershire Plan", Chapter 3 by Stewart C. Mason. London: Routledge and Kegan Paul, 1971. (p. 27) (The explanatory notes in brackets were written by the author of this thesis.)

reads in part:

"Another possibility is the establishment of a two-year course of broad further education through which all students wishing to enter higher education must pass.... Its object would be to give a broad basis of knowledge and some understanding of the inter-relationship of disciplines combined with a certain degree of specialisation. On this general foundation the student could proceed to build his specialisation without the detrimental effects experienced at present. It would also help to avoid premature selection by giving the student time to feel his way into his chosen subject while testing his choice against a wide range of studies.... The two-year course would be completed with an examination of national standard and would permit those who did not wish to pursue specialist studies to obtain a diploma or certificate in general studies." (1)

This NUS proposal was one of the first hints at the changing attitudes to traditional three-year degree patterns which had long characterised advanced education in Britain and may possibly be one of the first serious attempts to outline a two-year post-school qualification.

In September 1968, the Swann Report (2) was published. In Annex E of this report, Professor A.B. Pippard of Cambridge presented evidence to the Working Group in which he described his concept of a two-year period of study at a university leading to a Bachelor's Degree.

Professor Pippard stated that although the English university pattern has many virtues, it was evolved by and

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- (1) Higher Education Evidence - Part One Volume A Written and Oral Evidence received by the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins. London: HMSO, 1963, Cmnd. 2154 - VI. (pp. 221-2, 237)
- (2) Committee on Manpower Resources for Science and Technology - "The Flow into Employment of Scientists, Engineers and Technologists" Report of the Working Group on Manpower for Scientific Growth London: HMSO, Sept., 1968, Command 3760.

for the benefit of an elite class and has in recent years failed to respond to the rapid change of emphasis brought about by the transition to more widespread education. He criticised the professionalism which has developed all through this century and stated that in the sciences it was almost out of the question for a student to read science as an instrument of general education since it was felt that only a total commitment to science as a career could fortify him to develop his best qualities under the pressure of the innumerable facts and ideas he must master in the three years allocated to his first degree course. According to Professor Pippard the outcome of all this is a lack of a substantial body of non-professional scientists who are tolerably well-informed about the significance of science in modern society.

His standpoint then is that a great increase is needed in the number of students whose education is based on science, but in a more general sense than the professionalism current in the universities. In this way the need for specialists in narrow fields of science would be diminished. Professor Pippard continues:

"There must be no question of lowering academic standards, and for proof that standards can be maintained one has only to look at universities in the United States to see that, in spite of a certain laxity in many of their programmes of general studies, at best they are almost without rivals. If the United States gives confidence that other systems of university education are feasible, then the task is to try to combine the merits of all relevant systems into an ideal towards which to evolve, with the universities the willing partners of the legislators." (1)

Professor Pippard advocates that the first two years of study be taken up with general education, perhaps consisting of a wide-ranging course of science together with one or two other subjects, not necessarily scientific, studied in greater depth (his suggestion does not preclude general courses based

(1) Ibid. - (Annex E p. 106)

on Arts or Social Sciences). The next two years of study would be reserved for a fraction of students proceeding to specialised advanced education in conventional fields of university study. Specialised vocational training could be done at the very highest level by some of the older universities but Professor Pippard felt that it would seem appropriate to expect the new technological universities and the polytechnics to bear the main burden by establishing one- or two-year courses in engineering and other technical sciences, as well as post-experience courses in up-to-date methods and processes. Apart from this, there are many other types of vocational training which could follow the two-year general course and which would not necessarily be conducted at a university, for example, teachers' courses, business schools, medical schools, law schools and theological colleges.

The main thesis of Professor Pippard's proposal is contained in these words:

"In particular, the Bachelor's Degree would be awarded at the end of the period of general education, after two years at the university, so that those who had no wish to pursue specialist studies or receive vocational training could leave at this stage without any sense of failure. It is hoped that many students would indeed take this opportunity, for the present inflexible system (including the virtual guarantee of three years to every student) is harmful in setting before too large a proportion of the population the somewhat arbitrary goals which were originally designed for an academic elite." (1)

Professor Pippard's two-year degree proposals could reasonably be regarded as one of the precursors to further developments of the two-year or short-cycle concept in the United Kingdom and although subsequent Diploma of Higher Education (Dip HE) developments did not perpetuate the idea of a degree being awarded after two years, they do, however, contain many elements which are similar to Professor Pippard's ideas.

(1) Ibid. - (Annex E p. 108)

Another attempt to stir thought in the direction of a two-year qualification came from Mrs. Shirley Williams when she was Secretary of State. She posed questions to the Vice-Chancellors' and Principals' Committee who then referred them to their individual senates where they were mauled and derided. These questions (vi - viii) included the following suggestions which contain the embryo of much later thinking on the topic:

"(vi) the possibility that the most able should have the opportunity to complete a degree course in two years;

(vii) the possibility of some students not proceeding to the customary three-year course, but to a different course lasting only two years and leading to a different qualification;

(viii) the possible insertion of a period between school and university which would give school-leavers a better opportunity to formulate their views as to whether or not they wished to proceed to some form of higher education." (1)

The concept of a two-year non-degree course gained support and had great appeal at a time of escalating costs, but it also had academic appeal, since it could well involve a more equitable system of generalised tertiary education.

In discussing the average length of courses in institutions of tertiary education in the United Kingdom most of which lie between three and four years, Charles Carter of the University of Lancaster also supports the two-year concept with these words:

"A first obvious question is why should we not have a considerable proportion of two-year courses....surely the population of possible entrants must include some who would benefit by two years of higher education, but for whom the extra benefit of a third year does not justify the cost or the use of time.... It is therefore worth considering whether we should not insert into the system some two-year 'junior colleges', giving a qualification different from the first

(1) Lawlor, J. (Editor) - Higher Education - Patterns of Change in the 1970s London: Routledge and Kegan Paul, 1972. Chapter by W.H.G. Armytage - "In lieu of Delphi: what?" (pp. 6-7)

degree, but with provision for the transfer of promising students to the degree and degree-equivalent courses. These junior colleges would provide for a group whose apparent ability or degree of motivation lie at the margin at which it is doubtful whether they should commit themselves to a three-year course." (1)

Arrangements for the establishment of the Independent University (to be known as the University College at Buckingham) are now well under way and they hope to enrol their first students in January 1975. This institution will provide an interesting example of the implementation of an idea similar to Professor Pippard's proposals, namely, a form of two-year degree. According to Professor Max Beloff, the newly appointed principal of the Independent University, students will normally complete their degrees in an eight term two-year course. However, if they wish to proceed at a slower pace and have long summer vacations they would be permitted to do so. The Beloff proposals could possibly be termed a "concentrated cycle" since they do not fit into the pattern generally referred to as "short-cycle" tertiary education.

(ii) The Concept of a New Short-Cycle Diploma

On 14th December, 1971, Lord James of Rusholme, in his capacity as chairman of a Committee of Inquiry into Teacher Training, presented his report entitled Teacher Education and Training to the Secretary of State for Education and Science. Chapter Four of this report contained the framework for the Committee's proposed first cycle of teacher training and an integral part of this conception was the so-called Dip HE.

The Dip HE described by the James Report was intended to provide a higher education of value in itself: for a number of students, perhaps an increasing number, the diploma could well be a terminal qualification. The Report states:

(1) Brosan, G.; Carter, C.; Layard, R.; Venables, P.; Williams, G.P. - Patterns and Policies in Higher Education Harmondsworth: Penguin Education Special, 1971. (pp. 81-82)

"It is one of the curiosities of higher education in this country that for the 18 year old school leaver who does not want to enter employment immediately there is virtually no alternative, apart from certain kinds of training that are specifically vocational, to a 3-year course leading either to a degree or to a teaching qualification. The diploma suggested here would offer a 2-year course consisting of both a general education and some specialised elements, which themselves might look occupational choices, for example languages or economics for students thinking of a career in business." (1)

The James Committee was of the opinion that some students following the Dip HE courses might wish to continue rigorous academic study to a higher level. Of these, some might be acceptable candidates for university or CNAAC degree courses and the Committee hoped that, although the number of transfers would probably be small, institutions offering these courses would feel able to accept such students and give them credit for their two years' tertiary education. (2) Lord James and his Committee also felt that for some other students there should be opportunities within the college of education system to pursue degree courses designed for the Dip HE which would possibly meet their needs better than existing degree studies.

When considering the involvement of teachers in the Dip HE during their "First Cycle", the Committee considered the following possibility:

"For very many teachers a different kind of preparation is needed, and it is suggested that this could be provided in a two year course leading to the award of a Diploma in Higher

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- (1) Department of Education and Science - Teacher Education and Training (Committee of Inquiry under the chairmanship of Lord James of Rusholme) London: HMSO, 1972. (p. 46)
- (2) These proposals are similar to the American Community College associate degree courses which are often accepted by senior colleges and universities as equivalent to their own first two undergraduate years and transfer into the third year of a bachelor's degree allowed.

Education.... A common course of professional training, extending over two years for all, would thus be preceded by a diploma course for some teachers and a degree course for others." (1)

"The Diploma in Higher Education, given its content and character, would not only be a terminal qualification for many students and the basis for the professional training of many teachers, but could also increasingly provide an appropriate educational basis for training in other professions. If so, this professional training would often be given in institutions other than those in which the students had taken their diplomas." (2)

According to the Committee, the Dip HE would show a traditional and limited approach if it became simply a subject examination and this would be very much out of sympathy with the spirit in which it was conceived. A subject-based approach would inhibit the development of new approaches to general studies and of experiment with unit courses which, if unhindered, could provide flexibility in programming and a maximum freedom of choice to students. The Dip HE should be so designed as to emphasise the inter-relationship of various approaches to academic study and the importance of aesthetic and practical experiences, not often catered for in the present system of higher education.

In considering entrance requirements the Committee, although expressing doubt as to the value of two GCE "A" levels as a criterion of suitability for higher education, nevertheless recommended that while the possession of two "A" levels should be the normal requirement for entry to a diploma course, exemptions should be generously given for at least several years.

In concluding their comments on the Dip HE the James Committee were aware that their proposals would depend on the

(1) & (2) Department of Education and Science - Teacher Education and Training (Committee of Inquiry under the chairmanship of Lord James of Rusholme)
London: HMSO, 1972. (p. 41 and p. 46 respectively)

acceptance of the diploma as a valuable qualification and that no award can acquire high prestige overnight. (1)

The concept of a short-cycle tertiary educational qualification was therefore perpetuated by the James Report and the significance of the Dip HE proposals become apparent when more recent developments in this field are considered.

At least one institution, the North East London Polytechnic (NELP), anticipated the outcome of the James Report Dip HE concept and a working party of seven was set up by the Director in the Spring of 1972 to formulate proposals for a programme for a Dip HE which might be established at the Polytechnic in the near future. Their proposals were to be broadly along the lines suggested by the James Committee and their interim report appeared in October 1972, two months before the Government White Paper which endorsed the concept of a Dip HE.

The Interim Report recommended that the minimum entry qualifications should be as follows:

"(a) passes in 2 subjects in GCE at A level, together with passes in 3 other subjects at O level or CSE grades 1 or 2 in 3 other subjects or;

(b) pass in ONC or OND or;

(c) pass in Intermediate examination of a recognised professional body (on a list to be prepared) or;

(d) formal qualifications (e.g. of overseas examining bodies) equivalent to the above."

"Generous provision for exceptional admission should be made for applicants who produce evidence of strong motivation to further education." (2)

(1) Later in this chapter the problems experienced by diplomates from French University Institutes of Technology in trying to get their two-year qualifications recognised by industry and the public, will be described. These problems and those which may one day be experienced by possible Dip HE holders would seem to be similar.

(2) North East London Polytechnic - Interim Report - October 1972 Report of the Working Party on the Diploma of Higher Education. (p. 2)

The working party assumed that most of the students who pursue a course of general education can be expected ultimately to proceed to careers which do not require specialist technical expertise. They therefore identified four major career areas, namely, business and public administration; teaching; social work; communications. However, they did state that the Dip HE is not intended to provide an adequate terminal qualification for entry to any career in these fields, nor are these fields the only ones for which Dip HE would provide an adequate general education.

In the NELP concept of the Dip HE the student's objectives in the programme are conceived as those of a general education defined in terms of skills relevant to the ultimate vocational objective. The student's successful completion of the Dip HE will depend upon tests of what he can do rather than tests of what he knows.

Essential to the working party's formulation of the Dip HE programme is the fact that the student shall be an active participant rather than a passive recipient. Each student will be required to identify a field of special interest which will form the vehicle for much of his work and will define his physical location within a department of the NELP for approximately half of his time in the Dip HE. The formulation of a special interest by the student in consultation with his tutors will be undertaken in the first term and this special interest must then be studied and developed by the student throughout his first year.

During the second year he will have the alternative of continuing his special interest study or of selecting and developing a new one. For the special interest study the student will be guided by a tutor in the appropriate department of the Polytechnic. His work will include supervised study, practical and/or field work as well as relevant work outside the Polytechnic. Students will also have access to lectures, seminars and practical facilities available to students in other courses.

Each student will also undertake central studies which are explicitly directed towards the acquisition of the generalised skill objectives of the Dip HE and for this work the student will be attached to a central tutor.

According to the working party the theme of the central studies will be the formulation and solution of problems of action and decision. Each seminar group will have a programme which will include a progressive study of problem solving and also a study in turn of the development of each of the generalised skills.

Control of each student's programme will be exercised jointly by his two tutors (the special interest tutor and the central tutor) who will set assignments and maintain a continuous assessment of each student. Control and development of the whole Dip HE programme will be in the hands of a group of staff constituting a department of the Polytechnic working in collaboration with all departments in which special interest studies are based.

The last section of the Interim Report is devoted to an examination of the possible development of Cycle 1 (Dip HE) into Cycle 2 programmes and the validation by the CNAA of these advanced studies. It is made clear that whereas in the Dip HE programmes a general education approach will be pursued without many restrictions, in Cycle 2 with courses leading to professional as well as academic qualifications, external controls are inevitable.

Finally, the working party assumed that in accordance with Polytechnic policy, validation of the Dip HE programme (and of Cycle 2 programmes) would be sought from the CNAA.

This résumé contains the essence of the NELP concept of a Dip HE and represents the first thorough attempt of a tertiary educational institution in the United Kingdom to plan a programme of this type which could be labelled short-cycle tertiary education. This outline carries the full implication of that term since the NELP Dip HE provides access to further education or employment.

The CNAA also reacted to the James Report and during July 1972, they published their comments. The CNAA stated:

"1. If the recommendations of the Lord James' Committee of Enquiry are accepted, the Council will be prepared to establish the award of a Diploma in Higher Education."

"2. In accordance with the Council's present policy, such a diploma would of course be available to the whole sector of higher and further education in which it operates." (1)

The CNAA also announced that it is fully prepared to award a three-year degree (Honours or unclassified) to a course in Educational Studies. The Council also stated that the first two years of this three-year degree could lead to the award of a Dip HE.

When considering entrance requirements the Council stated that for both Dip HE and a first degree in Educational Studies the students should normally conform with the CNAA and University entrance requirements for first degrees. Nevertheless it would expect to continue its present policy of the transfer of exceptional students from lower-level courses to the degree or diploma courses.

The Council stated its belief that the value and acceptability of the Dip HE is likely to rest not only on the level of entry that is required but equally on the opportunities it will offer students for progress to further and more advanced studies, whether these are in Education or in other fields. The Council felt that it would be most desirable that holders of the Dip HE who proceed to degree courses of Universities or the CNAA should receive a measure of credit for the work they have already done. The extent of any credit or exemption allowed would depend on the nature of the diploma and degree courses concerned.

In ending their comments on the James Report the CNAA made a remark which links up with the work done in this field

(1) Council for National Academic Awards - Comment on the Report of the Lord James Committee of Enquiry into Teacher Education and Training July 1972. (p. 1)

by the NELP:

"The Council hopes also that any decisions regarding the Diploma in Higher Education will be taken by the Department of Education and Science in conjunction with conclusions reached on other two-year courses at sub-degree level, which will be of particular concern to the Polytechnics." (1)

At the end of May 1973, talks between the NELP and the CNAAC were held in an attempt to consolidate the original NELP proposals and to move towards validation of the Dip HE.

(iii) The White Paper

Education: A Framework for Expansion was presented to Parliament by the Secretary of State for Education and Science in December 1972. This document contained an examination by the Government of five aspects of education and was intended to provide a framework for future action by indicating the general direction of a ten-year strategy for the education service. One of the aspects dealt with included an analysis of teacher training and higher education and it was here that the Government gave its approval to a definite type of short-cycle post-school qualification and following the James Report proposal the new diploma was called Diploma of Higher Education.

Section 13 of the White Paper explained the Government's interpretation of the concept of a Dip HE. Their proposals were substantially the same as those contained in the James Report but there were some differences since the Government-approved Dip HE was designed to serve a wider purpose.

The White Paper stated that for those who wished to continue their education beyond school only a limited range of two-year courses is available at present, all in specific vocational areas and that the Government considered that this shortcoming should now be remedied. They believe that greater flexibility would be achieved in higher education by

(1) Council for National Academic Awards - Comment on the Report of the Lord James Committee of Enquiry into Teacher Education and Training July 1972. (p. 7)

the provision of a range of intellectually-demanding two-year courses and the Government also concluded, as a result of their consultations, that there is sufficient support for the introduction of courses leading to a Dip HE with the following six characteristics:

"Standard

They must offer a genuine and useful addition to those forms of higher education already available, not a cheap substitute for any of them. This means that they must be no less demanding intellectually than the first two years of a course at degree level. Thus the normal minimum entry qualification should be the same as for degrees or comparable courses (Five GCE passes including two at Advanced level (or the equivalent))."

"Availability

Courses on the lines proposed should be seen as a new option to be offered by institutions in each of the main sectors of higher education. It is intended that both general and specialised courses should be made available."

"Acceptability

The qualification offered after two years must be made generally acceptable as a terminal qualification and in particular as a qualification needed for entry to appropriate forms of employment."

"Credit

Courses should also be seen as providing a foundation for further study and be designed, where appropriate, in such a way as to earn credit towards other qualifications, including degrees and the requirements of professional bodies. This objective would be more readily achieved if courses were developed on a unit basis...."

"Validation

Courses should be validated by existing degree-awarding bodies. The Government welcome the willingness of the Council for National Academic Awards to undertake this responsibility; they believe that a number of universities will wish to offer the Dip HE themselves and be prepared to validate courses where colleges do not seek validation from the CNAA."

"Awards

It is the Government's intention that Dip HE students should qualify for mandatory awards." (1)

(iv) Subsequent Events - Criticism and Support

Reaction to the Dip HE proposals in the White Paper was immediate and widespread from all sectors of the binary system in England and Wales and throughout the rest of the United Kingdom.

Criticism

Shortly after the White Paper had been published a conference of the Association of University Teachers (AUT) was held at Bangor during December 1972. A resolution was passed by the AUT stating their commitment to three years as the minimum period needed to produce a useful higher education qualification. The AUT viewpoint is clearly stated by Professor W.V. Wallace of the New University of Ulster, Coleraine, in his capacity as chairman of the AUT Development Committee:

"....the AUT attitude to the intended new qualification is that it cannot provide in two years a qualification of sufficient breadth and depth to be properly regarded as higher education, that its introduction would deny many qualified young people the opportunity to take a degree, and that, for both these reasons, it should specifically not be taught in the universities."

"In so far as the Diploma is emerging, it is assuming the characteristics of at worst a super A-level, at best something quite distinct from the first two years of a normal degree which will have little value in itself and will require two further years of study to convert it to a worthwhile qualification." (2)

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- (1) Education: A Framework for Expansion - Presented to Parliament by the Secretary of State for Education and Science by Command of Her Majesty, December 1972. London: HMSO, Cmnd. 5174 (pp. 32-33)
- (2) The Times Higher Education Supplement - Letter written to the editor by Professor W.V. Wallace and published on 30th March, 1973.

In May 1973, the AUT (which represents 24,000 members) held another conference and announced a campaign to prevent the Dip HE from being launched at any university in England and Wales and stated that major clashes with the AUT would occur if universities persisted in attempts to start Dip HE programmes. The AUT fears that sub-degree work in universities will lead both to a drop in academic standards and to changes in university teachers' pay and conditions. The AUT is also concerned about entry for working class students to university. They are convinced that the Dip HE would represent "education on the cheap" and that its introduction would lead to working class students being fobbed off with a Dip HE in under-financed institutions.

The AUT feels that its case has been strengthened by the attitude of the Confederation of British Industry (CBI), whose members are not enthusiastic about the diploma. Members of the Association have also been angered by the suggestion that financial inducements might be given to universities which established Dip HE programmes.

The CBI started inquiries early in 1973 at the request of the Department of Education and Science (DES), which was anxious to assess employment possibilities for future holders of the Dip HE. In a statement during May 1973, the CBI said that there had been no interest in the Dip HE among the manufacturing industry and only a little more among service industries. The CBI explained that manufacturing industries tended to regard it as an unnecessary channel between entry at Higher National Diploma (HND) level and degree level. Service industries showed a bit more interest, possibly in using it as a general qualification for sales managers.

Fears were expressed in an editorial in the Times Higher Educational Supplement of 26th January, 1973 about the nature of the Dip HE since it will clearly have to serve two very different functions - as a terminal award acceptable to employers and as a qualification for students who want to transfer from short (or first) cycle to long (or second) cycle higher education. The Dip HE is unlikely to meet both

needs unless it is closely geared to what the universities think appropriate in terms of content, methods of treatment and standards. If, in addition entry to it depends upon the possession of two GCE Advanced levels the Dip HE will do little to open up higher education. At the same time it will not provide suitable training for a growing number of para-professions.

Support

Action in support of the Dip HE was as immediate as the criticism and a few weeks after the White Paper was published a historic trans-binary meeting between universities, polytechnics, colleges of education, colleges of further education, the Open University and the relevant professional bodies, was arranged to take place at the Polytechnic of Central London on 24th January, 1973. This meeting was convened by Sir Kenneth Berrill, chairman of the University Grants Committee (UGC) and Dr. Edwin Kerr, chief officer of the CNAA.

The outcome of this meeting was that all sectors of tertiary education were to be represented on a 12-man study group (appointed by the Committee of Vice-Chancellors and Principals, the CNAA and the Open University) established to advise on the design of courses leading to the Dip HE. The group was asked to report to its constituent bodies soon after Easter with the object of setting guidelines before the end of the academic year.

The study group eventually produced its guidelines on the establishment of Dip HE programmes during May 1973. It stated that the diploma should be seen as an additional qualification in a spectrum of qualifications available throughout continuing education. According to the guidelines it should prove increasingly possible for an individual to enter or leave at any point in this spectrum and at times to suit himself during his career. (1) This statement by

(1) This approach is similar to the American Community College pattern. The growth of Dip HE modular courses would appear to be a necessary step in this direction.

the study group should have important implications for the persistent sub-theme of the White Paper - that of recurrent education.

Added support for the Dip HE was soon forthcoming from the universities. Early in February 1973, the University of Nottingham became the first university to express its willingness in principle to awarding the proposed Dip HE to its constituent colleges of education. During March 1973, Loughborough University announced that it was proposing to incorporate the Dip HE within the structure of its courses and thus became the first university to approve this qualification internally. Clearly at Loughborough the decision on the Dip HE is intimately linked with the proposed merger involving the university, the college of education and the college of technology. However, it would be unwise to assume that Loughborough's decision on the Dip HE was simply a political reinforcement of the case for a merger.

Professor E. Richards, the Vice-Chancellor of Loughborough University has stated that support for the introduction of the Dip HE has come from a number of schools where pupils were more prepared to commit themselves to an open-ended two-year qualification rather than for a three-year specialist course. He believes that there will be a demand from young people for a Dip HE.

Bristol University soon followed Loughborough and became the second university to approve in principle the award of an internal Dip HE. By June 1973, six universities - Lancaster, Leicester, Nottingham, Southampton, Wales and Birmingham, had also publicly stated their intention in principle to award a Dip HE to their constituent colleges if they wished to take advantage of it. The universities of London, Reading and Hull are also engaged in discussions concerning the award of a Dip HE.

Undoubtedly the universities will be responsible to a large extent for the success or failure of the Dip HE. If they adopt a negative attitude, the diploma which is capable of radical and imaginative development, will be in danger of

becoming a rather poor substitute qualification for intending student teachers. However, if they respond to the challenge presented the Dip HE could become a valuable means of injecting the flexibility and diversity into higher education that will be needed as student demands change over the next few years and as mass tertiary education approaches.

(v) Issues

In advanced further education a very useful two-year qualification, the Higher National Diploma (HND) already exists, and nobody has successfully argued that its existence has inhibited the growth of degrees in the polytechnics. It is recognised that the HND attracts students who would not necessarily be attracted to a degree course, and so widens opportunity rather than reduces it.

It would be unwise to assume that as more and more 18-year-olds are drawn into higher education, all will want to follow a conventional three-year degree. If, as the Government envisages in the White Paper, the minimum entry level for the Dip HE is to remain at two "A" levels then the degree of flexibility of this qualification will be considerably reduced. If, on the other hand, the entry level is made the same as for the HND - one "A" level - then the Dip HE will represent a genuine extension of opportunity. (1)

Another issue which presents itself is whether a diploma of this kind, which implies course units and transferability for students, can get away from a subject-centred approach. NELP, which was the first institution to outline a Dip HE, has conceded that it was forced to give way to some of the pressures of an 18-plus and competitive entry throughout higher education by requiring two GCE "A" levels from entrants.

(1) The long term residential Colleges have for many years provided two year Diploma courses for mature students without formal qualifications, many of whom have gone on to complete Honours degrees with distinction. This lends weight to the thought that there is no appropriate sole criterion for entry to the Dip HE.

The question of transferability of course units or of the Dip HE itself will inevitably arise and there will almost certainly be a touchy dialogue between polytechnics and universities about whether a Dip HE can be changed in a third year into an Honours degree (the polytechnic line), or whether its holders will need a two-year course to reach Honours standard (the university line). One political battle to come will be to ensure that opportunities to transfer are not only technically open, but actually exist in practice.

Several polytechnics have demanded that greater emphasis be given to the Dip HE as a terminal qualification. Candidates entering a Dip HE which was deliberately geared to a two-year terminal programme and with the coherence often claimed for three-year degrees, would need to know that the award is regarded as a terminal one within specific institutions, but - with the existence of the Open University - never, it is hoped, in personal terms. Such diplomas are likely to be more specialised and vocationally-oriented, leading to on-the-job training or to specific occupations.

The universities are beginning to realise that the boom years of the 1960s are now over. The latest figures from the Universities Central Council on Admissions show stagnating applications, a high withdrawal rate, and nearly 3,000 unfilled places. The rival attractions of the polytechnics are just beginning to offer a challenge and the UGC quinquennial settlement, announced in January 1973, has put a damper on many new courses or new departments. (1) For these reasons, and others, the incentive to try out the new diploma will grow. Mrs. Thatcher is convinced that sixth-formers want this new qualification (though it is not entirely clear what evidence she has) and with the growing

(1) Add to these problems the fact that the establishment of a four-year norm for first degree courses may well be forced on Britain as a result of EEC membership since on average European degrees, which are frequently more broadly based, require longer periods of study than those in Britain, and the situation becomes rather complicated.

view that much higher education in the future may well be concentrated in shorter, less-specialised courses, updated by post-experience courses later in life, the case for the Dip HE is strong and goes some way to answer the harshest criticisms of binary rigidity.

The concept of a national commission for all higher education - the local authority sector as well as the universities - is no longer a distant ideal. (1) This concept is linked with the demise of the colleges of education (as implied in Government Circular 7/73) and the establishment of new regional committees to co-ordinate the education and training of teachers. Gloucestershire's plan to develop some common curriculum outside the universities by linking colleges of education and colleges of further education in an institute of higher education, comes at a time when the Dip HE is developing rapidly and could become an integral part of such a plan.

The binary dividing line seems likely to remain for some time to come although some writers feel that it is weakening. Given the jealous concern of the universities with autonomy, even if qualified by guidance from the UGC, it is understandable that educational planners require a public sector of tertiary education that can respond more comprehensively and easily to the economic and social needs of the country, and the Dip HE could provide this flexibility. Hitherto the colleges of education have straddled the binary line (subject to financial control from the public sector and associated in academic control with the university sector) but as they change their place

(1) The Commons Expenditure Committee recently made a proposal for a supra UGC and although this request seemed to arouse little interest, it could be unwise to assume that the idea of a national commission is a non-starter.

The Willey Committee had earlier considered the need to co-ordinate the three main components of the higher educational system, and they proposed that a Higher Education Commission, endowed with responsibilities extending to all institutions of higher education, should be established as a national forum and an advisory body to governments as to the needs of the various institutions. This Higher Education Commission was also to include representatives of the local authorities.

and function in the next decade the Dip HE could well become the bridge. The need to assess the implication of this new national award has already thrown a rope-walk across the binary gap.

C. The Norwegian Regional Colleges (1)

(a) Establishment

In 1965 a Royal Commission for Higher Education was established. This Commission had a very general mandate: to propose the overall structures and size of tertiary education establishments in Norway. The mandate included the non-university sector and the universities, and stressed the tasks of diversification, recurrent education and the creation of alternatives to existing studies.

The first report of the Commission presented for public debate in 1966, contained general principles and a quantitative sketch of the total system. The second report in 1967 proposed the establishment of a new system of regional centres for higher study, called Regional Colleges (Distrikthogskole), which were to integrate existing short-cycle tertiary institutions and develop new studies both in content and organisational pattern. Immediate political support followed these proposals and the Ministry of Education asked the Commission to make a special report on the Regional College (RC) concept which should contain practical ideas for their implementation. This was achieved by April 1968, and the Ministry created a working group to prepare a scheme to place before Parliament. In March 1969, a proposal was submitted to Parliament which was eventually accepted on 20th June, 1969 and on 27th August of the same year the first courses started in three colleges. In 1970 three more colleges were established with the proviso that all six colleges were to undergo a "test period" lasting until 1974. The Commission originally planned a network of twelve RCs but the political climate is so favourable that it is likely that even more of

(1) President Paul Preus of Quinsigamond Community College in Worcester, Massachusetts, was a valuable source of information on the Regional Colleges since he knows many of these institutions well.

these institutions will be established.

(b) The Objective Underlying the Regional Colleges

While it is realised that the present world trend towards comprehensive systems of tertiary education may make the creation of short-cycle tertiary institutions (SCIs) either inappropriate, or render them obsolete in the future, many countries are not yet ready for this comprehensive stage in advanced education. They see the development of suitable forms of short-cycle tertiary education and the building-up of special institutions to allow greater diversification, as an indispensable step in the attainment of a comprehensive system of tertiary education.

This objective was one of the main reasons for the creation of the RCs. The Royal Commission had stressed that they should be an integral part of a comprehensive system of tertiary education. Since the RCs were planned, and are now operating as autonomous institutions, the word "integral" was not used in terms of organisation, but rather as an integrated system that would mean easy transfer of students, teachers and money between institutions and various lines of study.

The development of post-secondary colleges outside the universities poses in the Norwegian context the basic dilemma evident in many European countries, namely, how can they establish their academic respectability without losing sight of the important alternative functions for which they were created. However, in Norway, owing to certain sociological and historical factors, the risk that RCs will be relegated to an inferior position vis-à-vis the universities, or even become poor replicas of them, is considerably smaller than in other countries.

(c) Pre-1969 Tertiary Education

Prior to the founding of the RCs in 1969 a twofold system existed in post-secondary education. The three

universities (1) offered a limited choice of traditional academic subjects while fifty short-cycle institutions offered mainly terminal, vocationally-oriented courses having almost no connections with the universities, while transfers either way were quite exceptional. The SCIs provided a limited number of programmes, each one specialising in one field, for example, teacher training, social work, engineering, and so on. The SCIs were small centrally-administered institutions and had little autonomy.

Almost all SCIs have a "numerus clausus" policy partly because of limited resources and also because of labour market considerations. This fact combined with the tradition of open university studies has, to some extent, prevented the SCIs from being labelled "less noble" than the universities. The limited access to SCIs and the open university situation forced many students to opt for a university as a second choice and this in turn frequently led to lack of motivation and high drop-out rates.

Both universities and SCIs accepted only graduates from the academic secondary schools and exceptions to this rule were rare. Thus with the onset of nationwide secondary education in the 1960s, and because it was becoming increasingly diversified, the rigid access system was subjected to increasing pressure.

Since most SCI studies constituted "blind alleys" without credit being given in the university system, transfer between the two sectors was negligible. The few students who had been permitted to transfer from technical SCIs and were accepted into the second or third year of the technical university in Trondheim, performed better than the highly selected gymnasium graduates. The advent of recurrent education and a systematic adult education programme strengthened the attack on lack of transfers and rigid entrance requirements.

(1) At this period the University of Tromsø was only at the planning stage. This institution later became the fourth Norwegian university.

The Royal Commission on Higher Education presented statistical evidence which indicated clearly the increasing attraction of SCIs and if they had not been closed institutions the trend may possibly have been even more marked.

There are several factors which could account for the great drawing power of the SCIs over the last fifteen years. Firstly, modern Norway is a culturally homogeneous and socially egalitarian society as compared to most other countries. Prestige differences between various jobs and professions are relatively low and salary scales do not vary as much as is customary in western nations. There is a relatively low private rate of return on university education and when salary differences are not great a two-year course seems more attractive than a protracted course at a university.

Secondly, a fairly equal distribution of prestige between university and non-university institutions has resulted since there is no classical school tradition. Latin and Greek have long been virtually eliminated from the secondary schools and as a result academic education has not developed the same superior status as in many European countries. The SCIs, being closed institutions, have been able to select students from large numbers of applicants and it is reasonable to assume that SCI students were on a par with, and often at a higher intellectual level, than university students.

Thirdly, there is a larger percentage of lower social strata among tertiary education students in Norway than in most western countries. A shorter education is naturally an easier step for such students, even if finance is not an obstacle, since a shorter course is a less radical break with tradition in their particular milieu. However, there is evidence that SCIs have not enrolled predominantly lower-class students since there are large numbers of middle- and upper-class youth attending these institutions.

Fourthly, SCI studies, with their greater vocational orientation and cross-disciplinarity are regarded by

employers, parents and many students, as being of greater relevance to life than traditional university studies.

A fifth and final factor is that the SCIs are dispersed around the country whereas the universities are situated in the largest urban areas. Norway being a sparsely populated territory, geographic proximity is important and it is an established fact that most research activities in universities are urban-oriented and serious problems facing small rural communities have been neglected.

By 1969 there was a general awareness of the great growth to come at tertiary education level. Owing to the low enrolment ratios in post-secondary education at this period (about 10% of the age group) there existed a huge potential for development. When coupled with the generalisation of secondary education the need for profound reforms in organisational patterns, admission regulations, length of studies, curriculum content, location of institutions, and so on, became apparent.

Lack of flexibility and their inability to innovate had proved to be a great shortcoming in the system of small, specialised, isolated SCIs. Lack of contact among the various disciplines and the narrowness of the training provided little internal stimulus and the teaching staff, curriculum and organisational patterns seemed to be repetitive. The same deficiencies were evident in the universities where little creative initiative in the fields of recurrent and part-time education had been exercised. The failure of universities and of SCIs to provide personnel in health services and for top posts at various levels of the economy, all added up to the need for great changes in tertiary education.

This then was the educational setting for the entry of the RCs. The rationale behind their creation was the desire to cure the prevailing ills and to create the necessary structural innovation to succeed in the transformation from elitist to mass tertiary education.

(d) The Need for Regional Colleges and Problems of Integration

The Royal Commission for Higher Education forecast the need to treble the number of post-secondary students from 30,000 in 1970 to 100,000 in 1990. It proposed that the greatest development should be in the non-university sector (from 10,000 to 40-50,000 representing an increase from 25% to 40-50% of total enrolment) whereas the university sector should increase from 30,000 to 50-60,000 which would mean a reduction from 75% to 50-60%.

The political strength of the RC proposals was indicated by the fact that they were given an early and quick start and that cognisance was taken of the great stress laid by the Commission on the need to regard the two tertiary educational sectors as an integrated whole, namely the post-secondary sector.

The consensus of opinion seemed to be that the necessary reforms in tertiary education could only be achieved by radical structural innovation and organisational changes. One of the vital factors proved to be the pressure of numbers and the fact that some young people were refused admittance to both the universities and the SCIs was becoming a political issue. In 1970 about 3,000 students i.e. 10% of university enrolments, were studying abroad. Yet another decisive factor was the movement towards decentralisation that took place in general politics during the 1950s and 1960s and the need to establish advanced institutions outside the largest urban centres played a decisive rôle in the political process which brought about the implementation of the RCs.

The speed of the process of creation of these colleges has brought about some problems, for example, insufficient planning of libraries, lack of textbooks and vacancies in teaching staff. Yet another retarding feature was the initial lack of clear political decision as to whether the existing SCIs should be integrated into the RCs and when and how this should happen if it was desired. Once the decision to

create the new colleges had been taken some of the SCIs immediately resisted any idea of integrating with them, and their affiliated professional organisations set out to defend the labour market monopoly established by a close recruiting system to the professions. The original decision had been to decide on the question of integration at the end of the test period in 1974 but the Labour Government, which came into power in March 1971, soon gave indications of their intention to settle this problem sooner.

The two largest types of SCIs in the non-university sector are those engaged in teacher training, and technical institutions providing engineering training. While no decision has yet been taken about the relationships of teacher training colleges and RCs, plans for integration with engineering SCIs have gone ahead and the first integrated project started in autumn 1971 under the aegis of a committee set up by the Ministry. Complete integration of all SCIs and RCs would appear to be desirable in order to attain the multi-disciplinarity and flexibility which is the goal of the new colleges.

In some individual regions, RCs and teacher training colleges have developed joint projects and the teaching staff at these institutions have shown some willingness to co-operate. The whole question of examinations in SCIs is a controversial one especially in the teacher training colleges since there is a centralised system of recruitment and enrolment and decisions on curriculum and assessment are all made by a central board under the Ministry's Department of Primary and Secondary Schools. The integration of the teachers' colleges into the RCs would mean that central control would be reduced and labour market considerations, which have always influenced access to teacher training colleges, would be lessened or even removed.

(e) Educational and Other Goals of the Regional Colleges

The following general educational goals (1) for RCs were formulated by the Royal Commission for Higher Education during the formative years from 1965 to 1970:

(i) They should broaden educational opportunity both socially and geographically.

(ii) They should provide a more even distribution of the resources invested in tertiary education since this has been one of the fastest growing sectors in national expenditure.

(iii) They should encourage greater interaction between tertiary education and society with the former engaging in new functions such as recurrent and part-time education, local development through research projects of a cross-disciplinary nature which are directly relevant to the region, and through direct participation in planning and public debate.

(iv) One of the central goals is to achieve a build-up of scientific and professional knowledge in the regions since this is at present almost exclusively located at the universities and in the largest towns.

(v) The stress on relevance is both an educational and a general political goal of the RCs.

(vi) Goals which are more difficult to define such as "quality of life", "individual development", "critical mind", and so on, indicate a shift from investment-oriented to consumption-oriented perception of tertiary education and this trend is increasingly being followed by the RCs, both in their official documents and in emerging practices.

(f) Regional College Links with the Universities(i) Introduction

The whole problem of connections with the universities has been defined as a search for diversification with a minimal of institutional hierarchy and a development of alternatives without these being regarded as, and eventually

(1) Organisation for Economic Co-operation and Development - The Norwegian Regional Colleges Paris: 8th October, 1971. (pp. 12-13) (A loose adaptation by the author of this thesis.)

becoming, "less noble" than university education. In countries where such alternatives exist in institutions outside the university sector, SCIs have the problem of achieving respectability without losing sight of the main functions for which they were created.

Such respectability and equality cannot be established within the educational sector alone since attempts at true egalitarianism in education can easily be frustrated by forces in the labour market, for example, salary scales which differentiate between the various types of institutions and degrees. The problems involved are essentially political in nature and in the articulation of their own policies, institutions have to remain aware of developments outside their own sector.

(ii) Accreditation and Articulation

The first graduates after two years of study at RCs emerged in the middle of 1971 and were given well-paid jobs in fields where their qualifications were in demand. About 15-20% of these students wanted to continue studying in other institutions, while some wanted to take extra courses at RCs. At this stage the policy of universities towards graduates from these colleges was not clear. The universities, being autonomous, have a wide range of options from awarding full credits to none at all. It would appear likely that they will decide upon various "systems of equivalence" which would depend on the relation between the RC examination and the course the student wishes to enter. There are clear signs that the attitudes of the universities are changing in a positive way; the Faculty of Humanities at Oslo University (the largest in Norway) accepts RC courses as components of their degrees even when RC courses are different.

A committee was appointed by the Rectors' Conference of the Norwegian Universities to submit proposals on mutual acceptance of credits between institutions of tertiary

education. The RCs (1) were invited to have a representative on the committee and the proposals were expected to be of such a nature that easy transfers will take place. Decisions on this matter are obviously of strategic importance to the whole question of future development and articulation of institutions of higher learning. The increasing pressure of numbers of students will no doubt make the universities fairly willing to delegate undergraduate work and to give credit where possible to courses done at Regional Colleges.

Although basic university subjects are included in the RC offerings, as can be seen from the stated goals of the colleges, they clearly have less priority than other courses. Subjects in which the pressure of numbers at university is great will be catered for, especially where such courses fit into the plans of the RCs. A good example is mathematics which is an important component in economics/administrative studies at the RCs. By means of a short additional course given at an RC a student may obtain a full credit for the one-year basic mathematics course in the science faculties of universities.

The so-called study organisations (2) do present an unusual problem but the universities seem to be in favour of these activities being taken over by the RCs in the regions where they have been established.

The prestige of the universities, or possibly the ambition of some of the RCs to become universities, has meant that many students and staff members have requested more university-equivalent courses in the colleges. The fact that there was a sudden increase in applicants in autumn 1971 indicated that greater student confidence in the RC courses

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- (1) The RCs are not members of the Rectors' Conference and the question of their membership will probably only be settled in 1975 after the test period.
- (2) The study organisations cover most subjects from hobby courses to basic university subjects. The latter group of activities are conducted by well-qualified teachers (mainly from the secondary schools) who are accepted by the universities.

had been established. The limited capacity of the RCs during the last few years has meant that only about half of the applicants could be accepted. In a situation where the RCs are closed institutions (owing to limited capacity) the fear that universities would use the RCs as a place to send their failures and drop-outs seems unfounded. However, once the RCs are functioning properly and open their doors wide perhaps these fears will be realised. The greatest increase in demand has been experienced in RC non-university or "alternative" courses but the reluctance of students to apply for university-equivalent courses may be explained by the fact that the question of credit had not been resolved. The desire of local politicians and RC leaders to see their institutions grow quickly may account somewhat for the drive towards increasing university-type courses at the RCs, since it is simpler to copy existing courses in established universities than it is to plan and implement really innovative courses.

The equalisation of prestige in the two tertiary educational sectors will no doubt be aided by the encouragement given to RCs to provide studies that can be useful to university graduates. Graduates in law and economics are already attending courses in maritime economics at the RCs and in the autumn of 1971 civil engineers and regional planners participated in a course on environmental studies.

(g) Curricular Patterns

New patterns of study allowing greater flexibility of subjects within or between RCs, can possibly have the appeal of greater societal relevance than probing deeply into isolated subjects. There is a growing awareness among staff members at RCs that their future lies not in emulation but in developing a different profile from that of the universities. The trend in RCs is to develop integrated or interdisciplinary studies by stressing, for example, pedagogical aspects, motivation, integration of practical work and case studies, rather than conforming to the subject orientation prevailing at the universities.

The development of inverted sequences of theory/practice and general education/special education, of post-work education and part-time studies, is an important part of these efforts. Particularly good results have been achieved thus far at RCs with groups that combined secondary school graduates and students with work experience. This could partly be accounted for by the fact that the gymnasium graduates have a good knowledge of theoretical disciplines, whereas the older students provide practical insight. In addition to this the positive advantage of group work as compared with traditional lecturing methods has been shown in a recent survey.

The development of "allmennfag" or "general studies" is another example of RC curriculum changes. The idea behind this change is to introduce into each course some 15-25% of themes emphasising the connections between society and study, society and professions, and thus increasing the student's perspective and perception of himself and his future job. The themes of "allmennfag" are closely integrated with the rest of a particular study course since an engineer will need different elements from those required by a social worker or a teacher. It is hoped that "allmennfag" will help counteract overspecialisation in the basic subject of each student's curriculum.

Since RCs are widely diversified, multi-disciplinary study centres, allowing and encouraging cross-disciplinary fertilisation among teachers and students, the idea of "allmennfag" fits in well with the general concept of the RC. The creation of a balanced milieu in which the social worker, the engineer, the business manager, the journalist and the teacher, can all work together in the same institution and at times on the same courses, may help them to understand each others' functions better and to have better rapport during their careers. The whole philosophy of the RCs is opposed to overstressing professionalism. In creating this environment the RCs have remained aware of the dangers of becoming too big because it is quite clear that the chances of real interaction diminish proportionately to size. The search for an optimum size, not only of a whole institution

but of departments, has high priority.

One of the main ideas in the RCs has been to organise the curriculum and staff to form: (i) "competence groups" - where people with the same and related subjects work together, aiming at continuous development of the teaching staff; and (ii) "planning groups" of an interdisciplinary nature, with responsibility for the various lines of study, in which the students will be strongly represented. The outcome of this type of organisational reform might have important repercussions and could pose a threat to established authority patterns in the academic community.

If successful, the development of "allmennfag" and of courses taken without career intentions, could become instruments of change within the whole Norwegian educational structure. Recurrent education is another aspect which could affect the whole system. Up to the present the traditional institutions have shown little interest in participating in this field and this has been a particular interest of the RCs. In fact, Parliament accepted a proposal that 25% of the total resources of RCs may be allocated to recurrent education and part-time studies. These functions have therefore been an integral part of the RCs from the outset. Since the growth of innovative organisational changes, curriculum procedures, and non-conventional offerings, depends largely on several external factors such as the reactions of society, of students, and of universities, it is clearly too early to estimate the significance of these developments in RCs.

A major trend in the development of curricula is the priority given in the first stage of RC growth to courses which are different from those given in existing institutions. This diversification and provision of alternatives is desirable in order to foster values independent of the universities. In a small country with a tradition of centralisation and a population of only four million, diversification is particularly important as is the provision of "alternatives" in fields where the universities have not

been willing or able to take the initiative. (1) The alternatives have been oriented towards a vocational goal rather than as a first cycle of university studies (as occurred in Sweden with the affiliated universities). Norway's size and its lack of human and financial resources was an important factor in the decision to limit the number of universities to four. This then is the reason why the provision of alternatives to the limited university opportunities is so vital.

Alternative fields of study can also be developed by providing new content to traditional subjects. An example of this is a one-year course in pedagogics at the RC at Lillehammer with the stress on the social consequences of various school patterns as opposed to the individual/psychological stress in pedagogical courses in the universities. Alternative courses of study already functioning are, for example, transportation, business administration, EDP and systems engineering, fisheries, social studies, technical fields, information and media, and so on. The status of these "alternatives" will depend mainly on their acceptance by students and society, especially employers in the private and public sectors.

(h) Regional College Personnel

To become a lecturer at an RC the same qualifications are needed as for similar posts at the universities. The RCs do not at present have the authority to appoint staff. A complicated procedure is required whereby a commission examines the candidates and makes a report. On the basis of this report the board of an RC presents its proposals to the Ministry which then arranges for the appointment of the successful candidate. This is a temporary arrangement during the initial years of the RCs to ensure the competence of staff and the participation of the Ministry is a formality.

(1) Tertiary education in fisheries is an example which proves how societal and regional needs and relevance carry weight, whether or not the universities will accept such studies as part of their degree courses.

Full responsibility for staffing is likely to be granted in the near future.

On the commissions of three members which examine candidates for lectureships there are usually two members from the universities. The danger here lies in the influence these university members could exercise in favour of academic standards along university lines and it is interesting to note that, eighteen months after the creation of the RCs, the Ministry insisted that more credit be given for experience in teaching, administration and practical work in order that academic merit should not be overemphasised. However, university participation is certainly still necessary in order to establish flexible transfer procedures and for information purposes.

The widespread and systematic use of part-time teachers from the universities and specialists from industry and services, are a feature of RC staffing. Lecturers with practical experience in their vocation or profession and who actively practice in their field, are considered important in order to help make the students aware of the relevance to life of the courses. University lecturers teach both in the "alternatives" and in university-equivalent courses but RC staff seldom teach in the universities owing to a form of time accountability imposed on them.

Teaching staff at RCs receive the same wages as university teachers at the same level. The RCs have devised a new approach to work conditions whereby the only condition stipulated in a teaching contract is that the teacher shall spend each full working day in the institution. The teaching load is not formalised to a certain number of hours per week and whether the lecturers use their time for conducting seminars, lecturing, individual tutorials, planning activities or other things, is in the hands of the institutions.

One possible source of dispute is the fact that during their training RC teachers have usually become accustomed to accepting traditional university values. What may counteract this occurrence will be the appointment of teachers with other

backgrounds and greater practical vocational experience. The prestige of the universities must be reckoned with but the recruitment by RCs of some very competent ex-university people who find RCs better vehicles for reforms which the universities are too rigid to accept, does help to balance the relative equality of the two institutions. However, much of the struggle for equality will be lost if teachers and lecturers regard the RCs as a second choice. In the decisions taken to establish RCs it was laid down that teaching staff must be given good opportunities for travel, free study periods, and so on, and this factor may help to avoid the "second choice" concept developing.

The small size of each RC (1,500 to 4,000 students only) is a positive factor in drawing staff since bureaucratisation is more likely to come with large institutions. At the RCs someone with initiative is likely to be seen and the opportunities for innovative work, the orientation towards studies with societal relevance, and contact with people from practical fields, are all considerations which help to make the RCs a desirable place to work.

The municipalities in which RCs are located provide good housing at reasonable prices. Add to this the better physical environment of the rural RCs, when compared with large urban areas, and these factors all provide inducements of no small value.

(i) Summary

The Royal Commission for Higher Education proposed that the larger part of each RC should be concentrated in a study centre for each region. However, as a regional system, the RCs would also include existing tertiary educational institutions located in the same region. It reasoned that a broader centre would have several advantages: a better choice of subjects would result; there would be a more attractive setting for the teaching staff allowing cross-disciplinary movement and a more flexible and innovative internal structure; there would also be better utilisation of resources such as buildings, libraries, and so on. The

Commission emphasised the need for institutions which are able to change and develop from within. Historically the small, specialised institutions have shown little capacity for change and creativity, and the Commission concluded that in the world of tomorrow it will be essential to have institutions that facilitate initiative and creative change.

During the test period the RCs are wholly State-financed with the exception of premises which are the responsibility of the regions. However, there is a strong likelihood that this responsibility will also be taken over by the State in 1975 since the universities are completely State-financed. The initial start of the RCs with regionally-paid premises had been effected in order to encourage each region to develop its own RC quickly, but this of course is an unfair approach since the richer regions have more resources than the poorer ones.

It is much too early to assess the success of the RCs after only 3½ years of operation. A decision to integrate all the SCIs outside the universities would certainly help to bring about a broad, comprehensive system of non-university tertiary education. In order to avoid the rigidities and inadequacies of the old specialised system and to fulfil the central aims of the RCs a pattern of integration should be established.

Within the university sector important policy decisions are being made most of which concern the admission and accreditation of students from RCs. If the universities insist on being restrictive in these matters then the RCs will be forced to conform to university patterns in order to obtain transfer and credit. However, there are strong indications that the universities are going to opt for an "open" system by giving preference to equality of levels rather than identity with regard to content.

Although the RCs were started in 1969 on a very modest scale with three institutions with a total of 150 students, by 1970 this figure had increased to 450 students in four RCs, and in 1971 there were six RCs with 1,100 students. In 1972

there were six RCs with more than 2,000 students with the number of applicants always exceeding the numbers accepted by about 50%. Admission policies are now less rigid than in equivalent institutions in the past, so an increasing number of students have succeeded in entering these colleges without the traditional matriculation certificate. This acceptance of "second route" students was decided upon because of the experimental value of having students with a varied background, and because students from this "second route" had performed well in the first RC intake.

Contacts are encouraged between RCs and local and regional authorities, as well as with people in the labour market, politicians, trade union leaders, and so on. Such contacts provide feed-back and an awareness of the state of relations between colleges and the surrounding regions and help achieve one of the main RC objectives, namely, service to the community.

With the generalisation of secondary education it is essential that the post-secondary system be expanded and diversified. The tasks of the RCs can therefore be summed up as follows:

- (i) Develop new courses and a new content for existing courses.
- (ii) Integrate the new courses and existing institutions into a comprehensive system stressing easy transfer and liaison.
- (iii) Develop a structure that facilitates continuous innovation and the strengthening of staff qualifications while giving students opportunities for real participation in the life of the institution.
- (iv) In order to achieve these tasks it seems necessary to strike a balance between autonomy and contact/recognition with the universities, between vocational and general education, between basic and recurrent education, and between service to society and criticism of it. (1)

(1) Organisation for Economic Co-operation and Development - The Norwegian Regional Colleges Paris: 8th October, 1971. (pp. 31-32) (A loose adaptation by the author of this thesis.)

On the basis of what has been seen of the competence and enthusiasm of staff and students, it seems realistic to assume that the RCs will achieve their goals, as well as participate in the articulation of new ones. The political backing of the RCs sustains this assumption.

D. "Baukasten-Gesamthochschule" (BGHS) in West Germany

(a) Background (1)

The present complete reorganisation of the tertiary sector in West Germany, involves, broadly speaking, three kinds of existing institutions. Firstly, there are the traditional universities which range from the oldest German university in Heidelberg (1386) and those founded during the ensuing centuries, to the post-1945 creation of Berlin (Free University) and Saarbrücken and the early crop of "new" universities including Bochum, Konstanz, and Regensburg. This group also includes the technische Hochschulen, originating in the 19th century as colleges for the applied sciences and technology and granted full university rights towards the end of the century. In the late 1950s and 1960s many of these institutions were expanded into technische Universitäten by adding faculties of arts and social sciences.

Secondly, there are the pädagogische Hochschulen (colleges of education) for the training of primary and some secondary school teachers. The third kind of institution is the Fachhochschulen, advanced professional colleges, especially for engineering and commerce. They are the most recent addition to the tertiary sector and their elevation from technical colleges, with a corresponding raising of entrance standards, followed an agreement between the ministers of education of the Länder in 1968 and received a decisive stimulus from attempts to harmonise the education of engineers throughout the EEC. Colleges of fine arts, drama, music, and physical education must also be included here.

(1) An excellent source of material for this background and for the whole section was: Innovation in Higher Education - Three German Universities published by the OECD in Paris in 1970 and written by E. Böning and K. Roeloffs.

Since the drop-out rate at universities is very high it is undoubtedly true that many a student might have obtained a qualification much better suited to his ability and inclination if he had followed a different course of study elsewhere. A Gesamthochschule, it is thought, will help gradually to eliminate this problem which in an age of mass education is harmful and no longer justified. At the same time it will encourage and upgrade the non-university colleges and will give their staff a chance to combine teaching with research since this is still regarded as the true hallmark of a Wissenschaftler (academic).

Many educators feel that the present gap between the practical and vocational courses at the colleges and the more theoretical curricula at universities should be narrowed. A large institution permits a high degree of flexibility, not only in the interest of the rapidly changing manpower requirements of industry but even more for the benefit of the student.

In a country that still operates a fairly rigid selection between three types of schools with different objectives and specialisation for all pupils at the age of 10 or 11 years, it is perhaps surprising that such a programme of flexible higher education should seriously be contemplated. It would appear as if German educationists want to offer at least those relatively few young people who gain an Abitur the widest possible choice.

It seems likely that wasteful duplication can be eliminated by integrating similar courses of study in hitherto separate institutions, and perhaps also by merging the administrative services of two or more colleges or universities. Another possible motive behind the reorganisation probably lies in the German predisposition to organise in the most effective way possible. There was no fundamental university reform in 1945 and German universities continued with the methods they had been forced to leave off in 1933. They were unprepared for the vast numbers of students that began to arrive from the mid-1950s onwards and during the last twenty

years governments and universities concentrated their energies on quantitative expansion. (1)

However, any reform of the administrative structure of the universities and colleges requires a consideration of syllabuses, curricula, and assessment. It calls for a fundamental rethinking and a new precise definition of the aims of higher education. The creation of Gesamthochschulen forces such a self-examination upon the universities and demands an adaptation to the realities of the age of non-elitist mass education.

The universities naturally fear the decline of their former rôle as outstanding research institutes since more research is being undertaken outside the universities, while they concentrate increasingly on teaching. The danger exists in a comprehensive system that the universities will lose the one characteristic that has legitimately distinguished them from other educational institutions: the preoccupation with the advance of learning through research.

It is possible that the vast institutions that are going to emerge, whether in integrated or co-operative form, may not be able to preserve the flexibility which was their main raison d'être and they may easily become centralised, bureaucratic and uniform organisations. While it is true that the colleges may gain more rights than they have previously possessed, the introduction of comprehensive universities will certainly increase the influence of the Government in university affairs. In future the Government will prepare legislation and make vital decisions about the institutions of higher education without even having to consult them.

The proposed Federal General Bill for Institutions of Higher Education, which, at least implicitly, favours the integrated form, refers to the Gesamthochschulen as combining the tasks of research, teaching, and learning which have

(1) Times Higher Education Supplement - Article by Günther Kloss entitled "Comprehensives face risk of becoming bureaucratic monoliths". 26th January, 1973. (p. 10)

hitherto been the responsibility of a variety of different types of institutions of higher education. (1) They will offer courses, and award qualifications, at different but co-ordinated levels, and to this end courses different in content, in length, and in qualifications awarded, are to be established in the main fields of study, in so far as the evolution of knowledge in a given field and the corresponding professional occupations reveal the need for differentiated training objectives.

There has been wide acceptance, in principle, of this concept by the Federal and Länder governments, the Wissenschaftsrat (expert planning body for tertiary education), a large number of university professors and most non-professorial staff members. However, the subject has been hotly debated and it is not yet clear what form these new "super-universities" should actually take. The main point of contention is whether such a linking of virtually all institutions of tertiary education should be on a co-operative basis, a more or less close association of independent institutions, or whether there should be total integration, that is, common curricula and one joint governing body for the new combined organisation.

There have been regular reports about the conversion of existing institutions of higher education into a Gesamthochschule (comprehensive university). (2) In July 1972, for example, the minister of the Land North-Rhine-Westphalia inaugurated five new institutions in one move, and in the Land Baden-Württemberg in south-west Germany two Comprehensive Plans for Institutions of Higher Education envisage the gradual transformation of all nine existing universities, all ten colleges of education, and some colleges

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- (1) Hamm-Brücher, H. - "Towards the Comprehensive University in Germany" in The World Year Book of Education (1972/73.) (Edited by Niblett, W.R. and Butts, R.F.) London: Evans Bros., 1972. (pp. 325-335)
- (2) Boyce, A.N. - "The Comprehensive University" Transvaal Education News, 52(5), May 1970. (pp. 13-15)

of technology into a few large, comprehensive institutions.

(b) "Baukasten-Gesamthochschule" (1)

Emerging from this background of the development of the comprehensive university is the model of a "Baukasten-Gesamthochschule" which represents a complete integration of present short-cycle higher education into university education.

Since the first proposal for a Baukasten-type university was presented in 1969 several German universities became interested in introducing some parts of the system on a small-scale or experimental basis. A large-scale experiment is being conducted at the new university (Integrierte Gesamthochschule) at Essen. Essen is the city at the heart of the Ruhr industrial region which so far has only one university at Bochum. The first students of the full Baukasten system are expected to start their studies at Essen in 1973.

In Germany the legal basis for the "integrierte Gesamthochschule" is being, and in some cases has been, created but the principles guiding its realisation are different from the liberal, flexible and student-centred concepts presented in the next few pages. There is a tendency to perpetuate the reglementation, the uniformity and standardisation, the rigid programmes of study and frequent selective processes, of the past. This danger of regression calls for experiments that could demonstrate the superiority of an integrated post-secondary education as outlined below and implemented in some institutions.

(i) Entrance Qualifications

Entrance requirements to the BGHS will be designed in such a way that students without formal high school qualifications such as the Abitur, will still be allowed to enrol for a compulsory "orientation course" of four to six weeks. If the first course is successfully completed a

(1) The word Baukasten means "box of children's bricks" (Cassell's New German Dictionary).

student may proceed to two more courses. Success in the second and third courses will enable a student to enrol for a regular programme of study lasting three years. These course requirements can also partially be met by part-timers by means of evening, radio or television courses. Academic advisors are supposed to recommend to every student appropriate courses within a chosen discipline.

The opening of universities to all kinds of secondary school leavers does not necessarily achieve the aim of equality of opportunity for access to higher education. For example, an examination of participants in the Bavarian Telekolleg revealed an underrepresentation of blue collar workers. (1)

(ii) Curriculum

The curriculum will be virtually "open" since there will be no prescribed courses. However, model programmes will be available illustrating certain sensible patterns of study. Each student will be expected to major in one subject around which about half their programme will be structured. The remaining courses will be divided between related and more remote subjects. This structure allows a permeability in all directions with a minimal loss of time because the individual curriculum can easily be adapted to such requirements. The advisory services will enable students, especially those who are inexperienced, to make use of this flexibility.

Although the BGHS model is based on an open curriculum, it appears that prescribed sequences, or at least partially-prescribed sequences, are unavoidable in a number of hierarchically-structured sciences. Examples mentioned are mathematics, and, to some extent, physics, engineering, and perhaps medicine. Today the common characteristics of these subjects is their rather rigid sequence of course requirements as determined by historical factors and by a real or presumed

(1) Corroborative evidence comes from England where 66% of the first applicants to the Open University were employed in non-manual or intellectual occupations.

structure of knowledge. However, in most other disciplines, hierarchical structures or substructures play only a minor rôle. Curricula in these fields would be open except for minor restrictions: (i) an introductory orientation course providing both technical information and training, and information on university life and cultural facilities; (ii) in order to guarantee a broad education each "fundamental aspect" of a discipline has to be learned at least once if graduation in this discipline is to be achieved; (iii) a student should take only 50% of the units in his main discipline. Another 25% should be taken in related fields and methodological sciences such as statistics. The remaining 25% of the study time should be reserved for units in remote fields, especially in interdisciplinary and in social problems.

(iii) Length of Studies

For either theoretical or practical programmes the duration of a short-cycle course will be three years. (1) Those students who do continue their studies immediately after the short-cycle will receive a long-cycle education of possibly five years. All graduates will be expected to resume their studies periodically by completing one course every three years. The object of this exercise in recurrent education is to counteract the rapid changes in knowledge and occupational requirements. By taking advantage of this institutionalised "permanent" education, graduates of short-cycle programmes may thus reach the formal qualification related to a long-cycle programme.

Short-cycle courses will need the application of new curricular patterns which will accelerate the presentation of information and reduce the amount of learning material so that enough time is left for learning by discovery. Such methods may be based on audio-visual aids, certain forms of

(1) Although the term "short-cycle" is generally used to refer to two-year tertiary education programmes, within the West German context it seems appropriate even for three-year programmes since degree programmes are much longer than, for example, in England.

programmed instruction, or even computer-assisted instruction. In the degree that short-cycle courses equip students with the cognitive, motivational and behavioural qualifications needed for a long-cycle course of studies, they will lose their terminal character.

(iv) Credit System

Since there will not be formal examinations the awarding of a degree will be based on a credit system, and the credits, contrary to present practice, will have exchange value from one institution to another.

Vocationally-oriented short-cycle courses traditionally emphasised the acquisition of testable and examinable knowledge. If this is no longer to be the basis of such courses, the function of examinations must change. Their rôle as a means of selection and provision of data to the outside world is decreased by the inclusion of "learning by discovery" and of new cognitive and non-cognitive aims of studying such as critical and creative thinking, motivation, ability to learn, to communicate and to co-operate since they are not testable or measurable. The examinations will now serve as a means of internal feedback for students and teaching staff, and, having lost much of their former significance, they will no longer create a stress situation. They will inform students about their comprehension and memory, and their ability to apply methods and knowledge to problem solving. At the same time teachers will receive information on the effectiveness of their teaching.

(v) Course Units

The elements of a Baukasten course of study will be compact courses or units of four to six weeks duration for full-time students or eight to ten weeks for part-timers. A year would be divided into eight periods of about six weeks and courses so arranged that each period would contain one concentrated course. Since a student would only be required to take four courses a year he would be able to choose from among a wide range of courses and have available about

twenty to thirty weeks of free time for preparation, deepening of understanding and individual or group continuation of course work. The time between courses could also partly be used as an opportunity to equalise qualifications of rather different participants in a course. This system also makes it easier for employed students to take courses especially if paid leave for educational purposes is allowed.

One of the few experiments with compact courses was conducted at the Pädagogische Hochschule Heidelberg during 1971. Some five hundred students who had participated in one out of eight courses organised according to the "Baukasten-principles" listed "compact organisation" as the main advantage of this system of study. It is obvious that compact courses, when organised in a liberal way, that is, by leaving enough time at the disposal of small groups and individual students, produce less interruptions, distractions and stress than today's curricula. The general experience in a few compact courses indicates a considerable increase of motivation.

(vi) Small Groups

Active and effective learning will be facilitated by providing tutoring and studying in small groups even when there are several hundred people involved in a course. The protagonists of the BGHS plans maintain that work in small groups is a prerequisite for learning by discovery in more complex matters and that it is also important for the activation and self-determination of the learning process. Groups will be more heterogeneous with regard to age, years of study, major disciplines, and vocational experience of their members. Experience will show whether heterogeneity will be, to a degree at least, a stimulating factor improving the ability to communicate or whether it would be preferable in this respect to form deliberately homogeneous groups. (1)

(1) Organisation for Economic Co-operation and Development - "The Linkage of Short and Long-Cycle Theoretically and Practically Oriented Studies in a 'Baukasten-Gesamthochschule'." (Paper by I. Kehler and E.U. von Weizsäcker) Paris: 22nd October, 1971, DAS/EID/71.73. (p. 10)

But whatever the results of these experiments, it seems unquestionable that small groups represent still the best way of integrating students of lower qualification or lesser experience, especially when compared to mass lectures or individual studies.

(vii) Heuristic Approach

The preferred method of study will be learning by discovery, supplemented by guided discovery of pure information, according to the nature of the discipline and of learning materials. Wherever possible courses will be focused on a scientific problem and on problem-oriented learning which is suitable for both science and occupation-oriented study. By emphasising the solution of theoretical and practical problems, this approach challenges the present value system, whereby highest prestige is attributed to pure theory thus creating the hierarchy of "noble" and "less noble" tertiary education.

The introduction of learning by discovery in short-cycle and vocationally-oriented courses results in certain problems since it is opposed to the traditional educational philosophy of "Ausbildung", which implies high effectiveness of learning and a somewhat authoritarian way of teaching. (1) These attitudes will have to give way to a full autonomy of students, who are themselves responsible for finding the optimal combination between activity and passivity, enquiry and pure learning. Students will also have to get used to the need for internal motivations which have to replace the former external motivations and help to overcome frustrations arising from problems implied in inquiry learning and in group co-operation.

(viii) Fundamental Aspects

In order to avoid eclecticism and to ensure knowledge of the major discipline, six basic concepts could be formulated

(1) Goldschmidt, D. and Hübner, S. - "Changing Concepts of the University in Society : the West German Case" in The World Year Book of Education 1971/72. (Edited by Holmes, B. and Scanlon, D.G.) London: Evans Bros., 1971. (pp. 265-283)

for each discipline, and each of these aspects would have to appear at least once during a normal curriculum. Although this constitutes a restriction in the choice of study units, the limitation is really much smaller than in most curricular systems. Transfer to other fields and problems must be learned and practised. Since an interdisciplinary approach is necessary for the understanding of most vital problems in an industrial society, emphasis is put on knowledge gained from other disciplines.

The concept of minimum knowledge is based on the awareness that knowledge is not a goal in itself, but that it provides means for the identification of correlations and of problems, that it facilitates co-operation with other disciplines and the finding of solutions. Transfer of concepts from one problem area (theoretical or practical) is indispensable, owing to rapid change of scientific knowledge. If transferability becomes a principle of tertiary education then knowledge taught and learned should be selected according to the theory which recognises that transferability increases with the degree of generalisation of knowledge. (1) Such generalised scientific knowledge implies emphasis on structures, theories, principles, concepts and methods. The gaps in a short-cycle graduate's knowledge of theory or application can be compensated for by a second cycle of studies or by recurrent (permanent) education.

(ix) Recurrent Education

Recurrent (permanent) education has the advantage of bringing students with vocational experience into regular courses. Both theoretically- and vocationally-oriented students benefit from receiving direct information about occupational requirements, problems, and the situation concerning the profession (or related professions) which they will soon enter. "Adult" students, on the other hand, benefit

(1) Klausmeier, H.J. and Davies, J.K. - "Transfer of Learning" in Encyclopaedia of Educational Research (4th Edition) R.L. Ebel (Editor), 1969. (p. 1489)

from close contact with the new student generation. It not only helps them to understand new research developments, changes in terminology, and values, of a particular science, but also to understand better their young colleagues at work (or even their children). The latter point was particularly emphasised by teachers and supervisors who took part in the already mentioned Heidelberg experiment. Nearly all of them objected to a separate further education for adults.

(x) Aims

The general aims underlying the concept of a BGHS could therefore be summed up as follows:

- (i) Expansion of higher education at fairly low cost;
- (ii) Equality of opportunity for access to higher education;
- (iii) The provision of short-cycle higher education within a multi-functional institution of higher education;
- (iv) Provision of interdisciplinary curricula for every conceivable combination of fields;
- (v) Education for a world of rapid scientific development and changing occupational demands, i.e. education of graduates capable of independent and continued study and research.

E. The University Institutes of Technology (IUTs) in France

(a) Establishment and Management

The concept of short-cycle tertiary education is gaining ground in many European countries. Young people entering tertiary education are offered a choice between two separate cycles of different duration - the long-cycle generally lasting four to five years and the short-cycle two to three years. France has been somewhat late in adopting this idea, which, except for a preliminary experiment in 1952 (1), only began in 1966. It is provided in the IUTs which as their name indicates, are a unit of the French university system.

According to a Decree of 7th January, 1966 the IUTs were originally established as university institutes. However, a

(1) Students enrolled in courses leading to the Brevets de Techniciens Supérieurs.

second Decree of 20th January, 1969 amended the initial proclamation and defined the IUT as Unités d'Enseignement et de Recherche (UERs) "as defined in Article 3 of the Law of 12th November, 1968". (1) The IUTs are therefore not autonomous establishments in relation to the universities and the intention of the Decree of 20th January, 1969 was merely to create the possibility of making them public establishments of a scientific and cultural nature attached to the universities. So far the Government has not made use of this proviso and has made no indication of its intention to do so in the future. Since they are UERs the IUTs are subject to derogatory provisions, and this "protectionism" gives them a unique position within the universities.

This derogatory situation applies to the creation of the IUTs. It is by Decree of the Recteur d'Académie on the initiative of the university, that the common-law UERs are created, while the IUTs are established on the recommendation of the Conseil National de l'Enseignement Supérieur et de la Recherche (CNESER). The courses offered by the IUTs and the internal structure are laid down by Decree of the Ministry of Education and this clearly indicates that an a priori State control continues to exist.

Yet another exception to the common law governing UERs is to be found in the administration of the IUTs. Membership of the IUT Administrative Councils is governed by a common regulation prescribing the presence of outside members. In the UERs this is optional. The proportion of elected members on the Council (academic staff, students and administrators) may also depart from UER common law, and academic staff can serve on the Council of another UER at the same time. Contrary to common law the chairman and vice-chairman of IUT Councils may not belong to the establishment. The Director of an IUT is not elected by the Council (as in a UER) but is appointed by the Ministry of Education on the Council's recommendation.

(1) November 1968 Orientation Law of Higher Education.

The internal structure of the IUTs differs from that of the common-law UERs in that a great deal of independence is left to the departments within the establishment. Moreover, the university does not have the power to define the aims of the IUTs or to establish or abolish them.

According to the Orientation Law of Higher Education the UERs depend on the university to which they are attached for all their resources. The universities in turn, rely on overall appropriations from the Government and they are then responsible for distributing these resources freely among the UERs and their associated public establishments. However, this does not necessarily apply to the IUTs since Article 8 of the Decree of 20th January, 1969 states that:

"Unless a specific request to the contrary is made by the IUT, equipment grants, operating credits and the number of posts for each IUT are determined by the Ministry of Education after consulting the Conseil National and the Conseil Régionaux de l'Enseignement Supérieur et de la Recherche."

This article therefore allows the IUTs to submit on this point to the common law by means of a request from their Councils but this has not occurred as yet.

(b) Access to University Institutes of Technology

Entrance requirements to the IUTs differ from those in the common-law UERs. Access to the latter is, in principle, open to all people holding the baccalauréat or an equivalent qualification, although, according to Article 21 of the Orientation Law, the universities are entitled to require these students to take "stages d'orientation". However, entrance to the IUTs is based on selection.

Access to IUTs depends on verification by admission boards of a candidate's level of attainment. Since no IUT department can recruit cohorts of more than 150 students this means that in practice a "numerus clausus" is imposed on the bodies responsible for checking the candidate's record. The baccalauréat is not always required for admission.

This procedure does create a number of problems since students, afraid that they might not be accepted, apply to several IUTs and often enrol at the same time in other UERs. They delay their final choice until the last moment, sometimes without warning to the IUT authorities. In this way enrolments are duplicated and this aggravates one of the major obstacles to the growth of the IUTs, namely, that all the places in the departments are not filled, although at the time of registration a large number of students have to be refused.

(c) Teaching Staff

From the outset, and in accordance with a deliberate policy on the part of the Ministry of Education, teachers from higher and secondary education and qualified persons from industry were appointed as IUT teachers. To make the recruitment of IUT teaching staff subject to university common law was therefore difficult in the case of the teachers from secondary education and from industry. For this reason the Director of an IUT appoints staff receiving fees and staff paid on a contractual basis (this applies to the majority of teachers coming from industry) while almost all permanent teachers, whatever their status or origin, are appointed by the Minister according to common law.

Permanent IUT teaching staff are chosen by the Director of the IUT on the basis of a recommendation by a commission appointed by the IUT Council and composed of representatives of the teaching staff and persons from outside. As Jean-Louis Quermonne (1) summed up this selection procedure:

"This situation has provoked considerable opposition. On the one hand, the teachers' unions are very reluctant to see 'persons from outside' sitting on this commission, since their presence does not conform to the general rule that teaching staff are selected by their 'peers'. They also

(1) Organisation for Economic Co-operation and Development: Place and Rôle of University Institutes of Technology (IUT) in the New French Universities. (Article by Jean-Louis Quermonne) Paris: 22 October 1971. (DAS/EID/71.67) (p. 6)

have reservations about the purely advisory functions of the commission which leaves the power of decision in the hands of the Director appointed by the Minister."

Since they are not recruited in the same way as their colleagues in other UERs (1) the IUT teaching staff, who come from the higher education sector, feel isolated. They are afraid of not being recognised by the university as full teachers and therefore being limited to the first-cycle (short-cycle) and prevented from working in the other university cycles. They also feel that they may be discriminated against in the selection of candidates for promotion. However, in Article 9 of the Decree of 20th January, 1969 provision is made for full-time established staff with the status of higher education teachers to be assigned, on their request and in respect of their research activities, to a university UER as well as to an IUT. This concession does help to ease the sense of frustration of certain IUT teachers.

(d) Status of the University Institutes of Technology

Apart from the exceptions already mentioned the IUTs have the same status as UERs within the universities. They have representation on the university councils in the same way as the other UERs and play an equal part in the various managing bodies such as permanent and disciplinary sections of the Councils, conferences of UER Directors, advisory commissions, and so on. The teaching staff coming from higher education may also be asked to sit on the "Conseils Scientifiques" in a personal capacity.

Since the Decree of 1969 made no mention of the position of university presidents with respect to the IUTs, it is usually agreed that, like the Recteur, they should attend sessions of IUT Administrative Councils in an advisory capacity. Correspondence from the IUTs to the Government is usually sent through the university president and the IUT

(1) UER teaching staff are selected by the restricted university council consisting of professors or assimilated members, after consultation of the UER and expert commissions.

accounts are attached to the accounting department of the university. University presidents have the same authority over the IUTs as over other UERs especially when it is a matter of law and order.

The a priori control over resource allocation and the powers of the Recteur, which are in many ways a survival of the old status of university institutes, do in fact demonstrate that the State exercises much greater control over the IUTs than over the common-law UERs.

(e) Recent Developments in the Universities and University Institutes of Technology

The main forms of short-cycle tertiary education in France are at present concentrated in the IUTs. However, it should be kept in mind that they have not always enjoyed this monopoly. Before 1966 the science faculties in universities offered courses leading to the Diplôme d'Etudes Supérieures Techniques (DEST), and the technical lycées provided - and in many cases still do provide - post-baccalauréat classes for higher technicians leading to the Brevet de Technicien Supérieur. The law faculties offered students not holding the baccalauréat a two-year course in legal technique called the Capacité en Droit and this has been continued by their successors, the UERs.

The term short-cycle is generally taken to mean a two-year cycle of tertiary education. The first stage of the present two, four and six-year university curricula leading to the Diplôme Universitaire d'Etudes Littéraires (DUEL) or Diplôme Universitaire d'Etudes Scientifiques (DUES) therefore fits the pattern known as short-cycle tertiary education. However, a decree from the Ministry of Education early in 1973, announced the introduction of a new two-year Diplôme d'Etudes Universitaires Générales (DEUG) to replace the DUEL and DUES with effect from the 1973-74 session.

The DEUG appears to be the first of a piecemeal reform pattern and since it applies only to the first of the three university cycles it is difficult to assess the DEUG fairly

without knowing what is in the mind of the Ministry for the second cycle leading to a licence or maîtrise. The new proposals will not necessarily bring about radical changes. The students' timetables in the six types of DEUG so far proposed (1) will be divided into the following rough percentages: sixty per cent of studies will be fixed at a national level, twenty per cent by the universities, and up to twenty per cent will be chosen by the students themselves. Little is said in the decree about the content of the courses which is left to the discretion of the universities. If the universities prove conservative then change will be minimal; if innovatory, then a much wider variety of courses can be made available.

On the main principle that the first cycle should become pluridisciplinary, a more general preparatory course with a wide field of options outside the main subject, the CNESER, the Ministry and even the unions are agreed. The decree has stated that the DEUG is expected to develop in students the skills and knowledge to express and apply their ideas; an understanding of the contemporary world; and the study and use of scientific concepts and methods. However, as Peter Avis recently stated:

"In each case between 70 and 80 per cent of the course time will be devoted to compulsory subjects. The study of a foreign language will be obligatory for all students...."

"It is clear that, despite these grandly phrased objectives and the general label fixed to it, M. Fontanet's diploma will limit genuine interdisciplinary learning to a minority of the course time."

"Also, it is left to the individual universities to apportion time for the various compulsory subjects, according to the means at their disposal: the national DEUG promises

(1) Six variations on the general theme are provided for in the Government's decrees establishing the new diploma. Courses are to be provided with specialisation in law, economics, social and economic administration, social sciences, literature and language, and science. Regulations for a seventh speciality in sociometry are to be published later.

to be a creature speaking with many local accents." (1)

Since the Ministry has not yet decided on its plans for post-DEUG studies, the problem of follow-up is posed only in very general terms in the decrees: the student is invited either to continue his studies in his main subject in the second cycle, or to go on to follow some other university course, or to go straight into professional life.

The first possibility is quite clear, but the second is difficult to understand, because "other university courses" (apart from the traditional licence or maîtrise) do not exist in French universities. Only in the IUTs does a first cycle university diploma qualify a student to do a year's study in, for example, business studies. The third alternative would present difficulties for students doing some of the new DEUGs. Only students in the entirely new DEUG in social and economic administration, and possibly those doing the mathematics and social science DEUGs would have a qualification directly relevant to certain careers.

Students have expressed fears that the DEUG would not be recognised in the collective wage-agreements negotiated at national level and would therefore be practically worthless in the employment market. The possibility of such a thing happening has been heightened by the non-acceptance of the IUT diploma during the last seven years which has occurred despite a law which was passed on July 16, 1971. This law stated that reference to professional diplomas and their equivalents should be included in collective agreements made between employers and workers' representatives. The new legal disposition was to have come into operation on January 1, 1973 but few new agreements registered since that date have included recognition of the IUT diplomas. The Government pleads that it can do little about the situation, apart from applying moral pressure, as collective agreements between workers and employers are by their nature voluntary.

(1) Avis, P. - "Protest as diploma is launched". Times Higher Educational Supplement. London: Times Newspapers Ltd., 16th March, 1973. (p. 10)

The issue has become politically explosive, leading to protests in at least a third of the 55 IUTs and the main grievance which the students have is about pay and status. They complain that many employers in industry categorise them as little more than skilled workers, despite the two or three years of study which they have completed. A much higher proportion of the students in the IUTs are of working-class origin than are the students who follow the longer and more prestigious courses of technology in the grandes écoles. The fact that the IUT students find their qualifications undervalued when they apply for a job adds strength to the accusation that despite attempts at democratisation French education is throughout a two-class system.

Professor Robert Ellrodt, a leading member of the CNESER has summed up the situation thus:

"The hope is that a suitable balance can be struck in the DEUG between the technical expertise so necessary in many modern careers, general knowledge, and the traditional academic disciplines. Not all universities are happy with this prospect, but it is ironic to note that for two or three years after May, 1968, the universities were clamouring for pluri-disciplinarité; now that the Government is imposing pluri-disciplinarité, they are not so sure." (1)

In an article in *Le Figaro* during May 1973, Raymond Aron, the sociologist, contemporary historian and university teacher, proposed that all pupils should write the baccalauréat (bachot) at the end of secondary education and that the last year at lycée should be cut off and combined with the first two years of university in colleges on the American model.

M. Aron insists that the bachot should only be a certificate of completion of senior secondary level studies and should not also have the character which it now has of a first-level university degree. Under M. Aron's proposals, holders of the bachot would still retain the right of entry

(1) Murray, A. - "'Wait and see' on new diploma". The Times Higher Education Supplement. London: Times Newspapers Ltd., 13 April, 1973. (p. 11) (Interview with Professor Robert Ellrodt)

to the three-year American type colleges from which successful candidates would pass to second-cycle university studies. If this were done, states M. Aron, then it would be possible to rechart the university map. Not all the universities would continue to be full universities since most of them would either provide for first-cycle studies or for only some subjects in the second-cycle.

Such a radical proposal, if it finds favour, would clearly involve both the IUTs and the first cycle at UERs. M. Aron is obviously endorsing the concept of short-cycle tertiary education and his proposals indicate yet another possible step in the direction of the removal of elitism in tertiary education in France and also the emergence of the concept of mass tertiary education. However, at this stage any attempts to seriously analyse M. Aron's proposal would be sheer conjecture.

(f) The Aims and Rôle of the University Institutes of Technology

The IUTs were set up in order to bridge a serious gap which the earlier introduction of the DEST in some science faculties and the Instituts Nationaux de Sciences Appliquées had not been able to fill. The aim was to provide university training for higher technicians in the secondary and tertiary sectors. Since this had not been undertaken by the university faculties, the IUTs were created by the State and were meant to be parallel to, but outside the faculties.

The State had already used this approach in other fields: for example, in creating the Ecoles Nationales Supérieures d'Ingenieurs, or in training senior civil servants when in 1945 the Ecole Libre des Sciences Politiques was nationalised and decentralised in the provinces in the form of Instituts d'Etudes Politiques. This policy of "stratification" consisted of duplicating the university faculties with university institutes intended to make good their deficiencies. It resulted in the gradual emergence of a second university system, parallel to but more flexible than the traditional system and separate from and fairly

independent of the faculties.

Since the Orientation Law of Higher Education in 1968, which abolished and divided up the faculties, the transformed university institutes have been placed on equal footing in the new universities with the UERs derived from the old faculties. In practice the two old systems - faculties and university institutes - can only be integrated gradually, and some universities still retain relics of this old structure. This is largely due to the derogatory statutes given in 1969 to most of the old university institutes converted into UERs, first and foremost of which are the IUTs.

The IUTs were therefore devised to provide the best possible framework for initial and continuing short-cycle syllabuses designed to train higher level technicians. They are mainly intended to provide a two-year terminal course. This does not mean that students who have chosen this course will be obliged to stop their training at the end of the short-cycle. The staffing ratio and the educational methods in the IUTs have been so designed that students entering employment on leaving IUTs will have received an education combining the necessary technical skill with an adequate general training. However, the various "bridges" to long-cycle higher education should enable some of them to continue their studies in other UERs at the second-cycle level. Other students would be able to follow continuing training programmes which would enable them to return to the university after a few years of professional life.

The link between IUTs and the second-cycle of the UERs was hampered before 1968 by the fact that the two systems were isolated from each other. "Bridges" had been established by certain regulations but there was inadequate co-ordination. This problem should gradually disappear as proper integration between IUTs and other UERs takes place allowing the IUTs to retain their initial vocation and guarantee that their students and teaching staff will not feel shut in a cul-de-sac. Some practical solutions to this problem have already been found, for example, at the Université des Sciences Sociales

de Grenoble, where there are "bridges" between the IUT and the Institut d'Etudes Commerciales (Maîtrise de Sciences de Gestion), and the UER de Sciences Economiques (Licence de Sciences Economiques) or the Institut d'Etudes Politiques (Centre de Préparation à l'Administration Générale).

Co-ordination between the terminal short-cycle courses in the IUTs and the first-cycle introductory courses leading to long-cycle studies offered in other UERs is still necessary. (1)

The first few years of collaboration between IUTs and the academic-type UERs within the same universities have been and will be difficult. The rôle of the IUTs will be decisive if the new universities are to observe the spirit and letter of the 1968 Orientation Law and help to create a modern culture based on the necessary alliance of science and technique, general training and technological skill. The IUTs can exert considerable influence on the development of the structures and aims of the interdisciplinary UERs and the universities. Their influence is already perceptible and can be seen in the external membership of university councils, in the practice of active and audio-visual teaching methods, and in the recruitment of associated or fee-paid teachers from industry.

The IUTs should reciprocally benefit from the best of university tradition for the recruitment of permanent teaching staff, strict scientific method and the necessary liaison between research and teaching. The result could be a true symbiosis, and where it is successful the IUTs will be able to achieve their aims.

For the IUTs to retain their specific character, technology will have to be promoted to one of the objectives

(1) This is similar to the familiar problem of articulation between community colleges and four-year colleges and universities in the United States.

It would be wise to keep in mind the fact that some IUT departments already organise one-year courses for students holding a diploma awarded after two years of academic higher education.

of university education and research. The IUTs can add to their initial task of training higher technicians by offering further education for adults already in employment as has occurred in Grenoble for commercial agents and data processors, and teachers in special schools.

The President of the Université de Sciences Sociales de Grenoble, has clearly stated the position of the IUTs as follows:

"The IUT themselves, instead of forming a cluster of small establishments subject to the uncertainties of local politics or private pressures, can find support in the universities. And by this means we may hope they will overcome the obstacles deriving from their specific character and which are a handicap in view of the uniformity of central government structures and the traditionalism of academic bodies like the University Consultative Committee. Consequently, provided that this gradual integration into the universities is well-designed and properly carried out, the IUT can only benefit from it." (1)

5. CONCLUSION

The six countries examined all provide clear evidence of the trend towards short-cycle tertiary education although a wide range of different applications has been apparent.

Certain common themes have emerged in all the SCI systems which have been analysed in this chapter and they include the following:

(i) SCIs are being developed in order to meet the increasing demands of large numbers of school-leavers for further education and are clearly indicative of a world trend towards mass tertiary education.

(ii) SCIs illustrate the need in all countries to educate a large group of people to, at least, intermediate levels in order to meet the world shortage of technicians or semi-professionals.

(1) Organisation for Economic Co-operation and Development: Place and Rôle of University Institutes of Technology (IUT in the New French Universities. (Article by Jean-Louis Quermonne) Paris: 22 October, 1971. (DAS/EID/71.67) (p. 12)

(iii) SCIs represent a gradual move away from an isolationist or elitist university system in most countries, and articulation, liaison and interchange of ideas, is taking place between short-cycle and long-cycle institutions which hitherto often had little or no contact.

(iv) SCIs are providing a logical home for the concept of recurrent or permanent education which is becoming increasingly apparent in many sophisticated, well-developed educational systems.

(v) SCIs, being generally locally-based, reveal the trend towards more widespread geographical location of such institutions (in order to make access easier) and also show the greater involvement of local communities in these activities.

(vi) SCIs are increasingly being called upon to offer a wide range of activities and programmes and in their move towards comprehensiveness they are sometimes being integrated with other institutions of tertiary education.

A trend towards more comprehensive systems of tertiary education is discernible in many countries and this could make the creation of new SCIs either inappropriate, or render them obsolete as independent institutions. However, many countries are not yet able to implement a fully comprehensive stage in their advanced education sector and the development of short-cycle tertiary education, which allows for greater diversification, is accepted as an indispensable stage in the attainment of an advanced comprehensive system. Add to this the knowledge that many SCIs are more and more being drawn into tertiary education as an integral part of an articulated system and also the fact that they usually do not function as totally independent units, and their future seems entrenched and safe.

In sum, then, Chapter Five has been an integral part of a logical development of this thesis from a foundation of general concepts or broad principles (Chapter Two) to specific applications (Chapters Three, Four and Five) which culminate in the final chapter (Chapter Six) in an examination of the possible adaptation and utilisation of these concepts within one particular system, namely, that of South Africa.

C H A P T E R S I XAPPLICATION OF SHORT-CYCLE AND OTHER TERTIARY EDUCATION
CONCEPTS IN SOUTH AFRICA

This chapter divides naturally into three main sections. First, an introduction to the South African tertiary education scene with an attempt to describe its place within the broad social and political framework of this country. In this section the component parts of the tertiary education system will be briefly examined with more stress laid on the place of the colleges for advanced technical education since they contain much short-cycle tertiary education. Second, there follows an analysis of selected tertiary education problems in South Africa for which the trend towards short-cycle tertiary education and other related concepts might indicate a solution. This analysis is then followed by the general consideration of some possible areas of adaptation of predominantly American concepts to our tertiary education institutions. And third, the main recommendations of the whole chapter are once again set forth in bold outline so that their feasibility may be finally considered and some justification given for having made these recommendations.

1. TERTIARY EDUCATION FOR A CHANGING SOCIETYA. A Pattern of Vertical Segmentation

The assumption of major political power by the Nationalist Party in the elections of 1948 brought about a steady implementation of the policy of separate development and concerted efforts were made by the central authorities to withdraw the rights of the provinces to control the education of their non-whites. The first legislative action was taken in 1953 with the promulgation of the Bantu Education Act. This Act led in 1958 to the creation of a separate Department of Bantu Education with its own Minister. Then followed the Coloured Persons Education Act in 1963 and finally the Indians Education Act in 1965.

Within the passage of twenty seven years the Central Government had eliminated the control which the provinces had

over the education of the three non-white racial groups and brought about complete vertical segmentation of education by means of four separate educational sectors.

The motivating force behind this division of education has been the ideological consideration of the Government policy of separate development which is based upon the self-realisation of each racial group as a separate entity within its own carefully delineated territory.

Tertiary education was also affected by this division into four separate systems and the acceptance by Parliament in 1959 of an Act to make possible the creation of new universities for the three non-white groups brought about considerable changes in the structure of the whole tertiary education pattern.

The Extension of University Education Act No. 45 of 1959 introduced two new principles into the established university practice in South Africa:

(i) It created State-controlled universities alongside the State-aided universities.

(ii) It deprived the universities of the right to accept or reject students on ethnic grounds and vested this right in the State.

The Act prohibits the admission of white persons as students at the State-controlled universities, and prevents non-white persons from attending the State-aided universities, other than the University of South Africa (UNISA) which is a correspondence university. The responsible Minister was also empowered to limit admission to a particular university to a specified non-white ethnic group. However, certain exceptions were allowed, for example, any non-white student who was registered at a university previous to the Act, is entitled to complete his studies at that university. A non-white person may also be admitted, subject to Ministerial approval, to a course of studies at an "open" university if such a course of studies is not offered at the particular

university to which he is entitled to go. (1)

Prior to the Act non-white students had always been admitted to the Universities of Cape Town and the Witwatersrand (except for Bantu students who were not admitted to the faculty of medicine at the University of Cape Town), while in 1936 the Natal University College established part-time classes for non-whites which were mainly intended for Indians but were, in fact, open to all non-whites. Then in 1940 the University of the Witwatersrand announced its willingness to admit a quota of non-white students to its full medical course. Eventually in 1951 a faculty of medicine was established at the University of Natal and the Natal Medical School opened with admission being restricted to suitably qualified non-whites. These universities became known as the "open" universities because of their willingness to enrol non-whites.

Enrolments of non-whites at the "open" universities were greatly reduced by this Act and except for programmes in dentistry, engineering and architecture, which are not offered at any of the non-white universities, numbers are dwindling rapidly. A natural result of this legislation has been the increasing numbers of external students enrolling with UNISA.

The outcome of this division of the races has brought about a unique tertiary education structure. Any examination of the South African tertiary education scene must therefore take cognisance of the heterogeneity of the society within which it exists and realise that its needs are possibly more complex than in a more homogeneous society.

2. TERTIARY EDUCATION INSTITUTIONS IN SOUTH AFRICA

A. The Universities

South Africa's sixteen universities include a wide range of institutions which are racially, linguistically and geographically separated.

(1) Behr, A.L. - University Colleges for Non-Whites - Retrospect and Prospect. Johannesburg: SAIRR, January 1969. (pp. 21-22) (RR. 7/69)

The ten white universities fall under the general aegis of the Minister of National Education and receive up to 80% of their funds from the State. There are five Afrikaans-medium, four English-medium and one dual-medium university.

There are five non-white universities, three of which are for the Bantu of different ethnic groups, and one each for the Indian and Coloured peoples. They are controlled by three different Ministers and receive almost all their funds from the State.

Lastly there is the University of South Africa which is a non-residential, correspondence university providing tuition for about 32,000 students of all races.

(a) The White Universities

In spite of their considerable financial dependence on the State the white universities are autonomous within themselves and they administer and run their own affairs in all matters except in the creation of new departments or major building developments where considerable financial backing is needed. The universities may teach what they think fit in any way they wish within the law of the country.

Entrance requirements to all degree courses at universities in South Africa are controlled by the statutory body known as the Joint Matriculation Board (JMB). A minimum requirement for university entrance is a matriculation exemption certificate (attained after 12 years of primary and secondary schooling) or its equivalent but some exceptions are made in, for example, the case of mature students (over the age of 23) who are granted conditional exemptions to proceed with university work, subject to the fulfilment of certain conditions.

Enrolments at the ten white residential universities have been increasing steadily and it is significant to note that of the 3.8 million whites (1970 Census figure) in South Africa, 62,183 were enrolled as students in the ten white universities during 1972, while out of a total of 29,289 students at UNISA in the same year, 23,339 students (80%)

were also white. (1)

The white universities enter into liaison twice each year when their vice-chancellors meet in the statutory Committee of University Principals (CUP) which was established after the Universities Act No. 61 of 1955. Its function is to make recommendations to the Minister of National Education on any matter of common interest to the universities. There is also a University Advisory Committee which was established under the same Act as the CUP. This Committee advises the Minister on matters affecting policy in regard to the universities, particularly those of finance and forms a valuable link between the universities and the Government. (2)

Although the rectors of the non-white universities are not formally members of the CUP, they attended a joint meeting with this body in January 1973, and this will possibly help to bring about closer links in the future. Apart from the Permanent Inter-departmental Committee for Co-ordinating Education Services for All Races there is no formal machinery outside the Cabinet for the co-ordination of the tertiary education sector (for all races) as a whole. (3)

The white universities were formerly financed through a formula which was revised quinquennially. However, this form of subsidy has been suspended pending the report of a commission led by Mr. Justice van Wyk de Vries. The universities have been provided with ad hoc grants based on a 10% increase over their previous year's subsidy. This interim measure has seriously affected the universities since the subsidies have not always kept pace with growth and some universities are deeply in debt. It is possible that there

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- (1) This figure contrasts strikingly with the total non-white university enrolments especially when one considers the relative size of the non-white population in relation to the total white population.
- (2) Behr, A.L. and MacMillan, R.G. - Education in South Africa (Second Edition) Pretoria: Van Schaik, 1971. (p. 251) (Adaptation by the author of this thesis)
- (3) This is a significant point which will later be analysed in the second and third main sections of this chapter.

will be far-reaching changes in the system of financing white universities in the near future.

It is significant to note that very few (if indeed any) programmes or courses offered at these universities could genuinely be labelled short-cycle tertiary education since almost all university work is geared towards long-cycle degree attainment.

(b) The Non-White Universities

The Extension of University Education Act No. 45 of 1959 gave rise to the establishment of four new university institutions for non-whites, namely, the University College of the North, in the Transvaal, for the Sotho-, Tsonga- and Venda-speaking peoples, the University College of Zululand for the Zulu people, the University College of the Western Cape for the Coloured people and the University College, Durban, for the Indian community. The first three institutions were opened in 1960 and the last-named in 1961.

Also in 1959 the University of Fort Hare Transfer Act No. 64 provided for the transfer of the control of the University College of Fort Hare from the Department of Education, Arts and Science to the Department of Bantu Education. This university, situated at Lovedale in the Cape, was first established in 1916 as the South African Native College and is the oldest non-white tertiary institution in the country. Today it enrolls mainly Xhosa students.

In terms of the 1959 Act the non-white university colleges were affiliated to UNISA and could not grant their own degrees. However, in 1969 enabling legislation was passed in Parliament and the three Bantu universities became known as the University of the North, the University of Zululand and the University of Fort Hare, while the Coloured university college changed its name to the University of the Western Cape and the Indian university college became the University of Durban-Westville. The five institutions thus became "autonomous" State universities with their own degree-granting rights.

With the exception of those students allowed to attend Fort Hare (which was mainly reserved for Bantu peoples) and from 1946 those who were eligible to enrol for UNISA correspondence courses, all other non-white students, prior to 1959, had to attend the "open" white universities or travel overseas if they wished to study for a degree.

An examination of the academic teaching staff statistics reveals an overwhelming majority of whites in all the non-white universities. Corroborative evidence from the University of the Western Cape reveals that after thirteen years there is not one Coloured professor at the University and only one Coloured senior lecturer. There are only 12 Coloured lecturers in comparison with 79 whites.

Whites also occupy almost all key administrative positions although there has been a steady stream of non-white appointments to lesser administrative posts. The appointment in October 1973, of Dr. R.E. van der Ross (a Coloured) to the Rectorship of the University of the Western Cape means that for the first time a non-white will occupy the senior post in one of the five universities. This appointment has strengthened the claims of the Indian community that the next Rector of the University of Durban-Westville should be an Indian, since, relative to population, the Indians have more highly qualified people than any other non-white group. Although Government policy in these institutions is that of non-white incumbency it is a slow process since so few non-whites matriculate each year and even fewer attain degrees.

Initially the respective non-white peoples were reluctant to accept their own separate universities since they feared a dilution of standards. However, enrolments have grown steadily since their establishment and by the early 1970s there were approximately 6,100 students enrolled in the five non-white universities with an additional 5,950 enrolled at UNISA. This number, when viewed against the total non-white population of about 18 million, is somewhat disturbing since it is clear that the whole non-white tertiary education sector simply cannot supply the numbers of diplomates and graduates needed in this country.

An examination of the programmes and courses offered at the non-white universities reveals that more work is done at a level which could well be called short-cycle tertiary education than is the case in white universities. Figures extracted from official sources (1) indicate, for example, that of the 332 degrees, diplomas and certificates issued in April/May 1971 at the three Bantu universities, 130 (39%) of this total were actually non-graduate diplomas and certificates which were of shorter duration than degree programmes. This would appear to support the contention that within the South African context the less-sophisticated non-white universities are providing at least some measure of short-cycle tertiary education.

B. The Colleges of Education

(a) The White Colleges

Since 1910 the greatest amount of primary teacher training for whites has been done by the provincial authorities while most universities have also retained a small share of this work. The training of secondary school teachers has mainly been the responsibility of the universities although, up until very recently, some colleges of education (as the teacher training colleges have been re-named) did share in this task.

Since the passing of Act No. 73 of 1969 (the amendment to the National Education Policy Act No. 39 of 1967) the training of secondary school teachers may only take place at a university and this has brought about some changes in the work done by the colleges of education and by 1976 these institutions must have shed all their secondary teacher education work.

An example of an institution which has been affected by this legislation is the Johannesburg College of Education (JCE) which for many years housed and trained the graduates (mainly from the University of the Witwatersrand) who were taking their professional teaching diploma. However, JCE is no longer permitted to perform this function

(1) Bantu Education Journal, May 1972. (p. 21)

and the University of the Witwatersrand has had to take over the training of these students. Also affected have been the colleges for advanced technical education (CATEs) which have been performing the task of training secondary teachers for subjects such as art, commerce, home economics, technology, and workshop practice. They are also, with three exceptions at present, being forced to shed this work. (1)

At present there are seven colleges of education in the Cape, four in the Transvaal, three in Natal, and one in the Orange Free State. All these colleges now offer courses of three and four years duration which lead to different primary teaching qualifications.

Despite attempts during the late 1960s to affiliate colleges of education to universities in institutes or schools of education (as in England and Wales) this pattern of teacher education did not materialise and except for the Teachers' College which is affiliated to the University of the Orange Free State, all these institutions are provincially controlled in a separate system of colleges of education.

Students may enter these colleges without having matriculated but they must be in possession of a Senior Certificate or some form of Standard 10 pass or its equivalent. A small percentage of the students have matriculated and would in fact have been accepted at a university if they had applied.

The white colleges of education can no longer be classified as short-cycle tertiary institutions (as would have been the case when their diplomas and certificates were awarded after two years) since primary school teachers are now legally required to train for at least three years full-time. The three-year and four-year programmes now offered by these institutions would rate as long-cycle tertiary education.

(b) The Non-White Colleges

Since there are no teacher training colleges for the Bantu at tertiary level (only teacher training schools not

(1) The part played by the old technical colleges and the new CATEs in teacher education will be examined separately in Section 2 C. of this chapter.

going beyond Std. 10) all teacher training at a post-secondary level is conducted at the Bantu universities and the faculties of education provide non-graduate diplomas and certificates as well as graduate teacher training and professional degree programmes.

There are four Coloured teacher training colleges in the Cape, namely, Hewat situated at Crawford; Southern Cape at Oudtshoorn; Dower at Uitenhage; and Perseverance at Kimberley. In the Transvaal there is one college in Johannesburg known as Rand College of Education, and in Natal there is the Bechet Training College in Durban.

The training colleges accept students who have completed at least the Senior Certificate and offer a two-year programme leading to the Primary Teachers' Certificate and a three-year programme leading to the Primary Teachers' Diploma. Teachers for secondary schools are trained at the University of the Western Cape and the Peninsula College for Advanced Technical Education although many training college students are, in fact, used in secondary schools owing to the lack of matriculated students to train at the University.

In July 1973, Mr. D. Rampono, became the first Coloured Rector of the Bechet Training College in Durban and the second to fill such a post in South Africa. The Administration of Coloured Affairs has stated that its aim is to have as many Coloured lecturers as possible at these colleges and that whites are being employed mainly on a temporary basis so that they can easily be replaced when a qualified Coloured becomes available.

The two-year programmes offered by these institutions fall quite definitely into the category of short-cycle tertiary education and once again it would appear that these programmes are meeting an interim need which will exist until such time as more Coloured graduate teachers become available.

At present there are two Indian colleges of education, namely, Springfield College of Education (Durban) and Transvaal College of Education (Johannesburg). The former trains most of the primary teachers in Natal while the latter

caters for the Transvaal. Both these colleges prepare students for the Primary Education Diploma (3 years) and the Lower Secondary Education Diploma (3 years).

In 1971, a total of 583 students were enrolled at Springfield College of Education and 269 at the Transvaal College of Education. Secondary high school teachers are trained at the M.L. Sultan Technical College and at the University of Durban-Westville.

The colleges of education are under the direct control of the Division of Education of the Department of Indian Affairs. In 1971 there were 44 Indians on the staff of the two colleges and 43 whites, which certainly represents a more favourable balance than in most other non-white institutions at this level.

The Indian community has now reached a stage where they are producing enough matriculants to provide better-qualified teachers and all students now train for at least three years (full-time). These colleges cannot therefore be described as short-cycle tertiary institutions.

C. The Colleges for Advanced Technical Education

(a) The Six White Colleges - Introduction

With the enactment in March 1967, of the Advanced Technical Education Act No. 40 of 1967, the Cape Technical College, Natal Technical College, Pretoria Technical College and Witwatersrand Technical College were deemed to be colleges for advanced technical education.

In accordance with the powers granted him in section 5.(1) of this Act, the State President, by proclamation in the Government Gazette in 1968, declared two more institutions to be CATEs, namely, Port Elizabeth Technical College and the newly built Vaal Triangle CATE.

This Act gave greater autonomy to the college councils and "advanced" education was defined as post-Std. 10 work. Up to this stage these colleges had been providing a certain amount of advanced education. However, with the acceptance of this new designation it was decided to train apprentices

in separate institutions and that secondary-level education should be moved away from the colleges in order that they might concentrate to a greater degree on tertiary, vocationally-oriented education.

Prior to 1967, higher education had been associated mainly with the universities while the training colleges for teachers had concentrated on short-cycle professional education mainly lasting two years and more recently extended to three years. The CATEs could now enter the field of tertiary education although their emphasis and approach would be different from those at the universities. Like the colleges of education the CATE programmes and courses are more practical and their objective is mainly the training of personnel for immediate employment.

Motivation for the elevation of certain colleges to an advanced level was similar to that in England during the 1950s when some technical colleges were renamed colleges of advanced technology (CATs), namely, the need expressed by industry and commerce for large numbers of technicians and intermediate personnel who were trained to an advanced level for work which was less academically-orientated than the universities. The more industrialised a nation becomes, the more it will need these "middle-men" and women to complement and assist the work done by the engineer or technologist. Countries such as the United Kingdom, the United States, Japan and Australia had long been attempting to solve this very problem and as the leading industrial nation in Africa, South Africa needs to make an effort to correct the imbalances which have arisen.

The universities simply cannot cope with the demand for technicians and similar posts since their approach is more academic, scientific and abstract while the more concrete, vocational approach of the CATEs is admirably suited to train these people. Unlike the CATs in England, the South African CATEs are not destined to become technological universities as would seem clear in the following statement by the then Minister of Education, Arts and Science during the second

reading of the Advanced Technical Education Bill in 1967:

"It is by no means my intention that these technical colleges should be enabled to develop into technical universities. They have been established to afford any White person above the Std. 10 level but below university degree level an opportunity of taking a technical course. We should not hold out the prospect (of their becoming universities) because then they will have to be continually restrained and will not achieve the object for which they have been established. I am opposed to specialised universities. I believe in a university which has full faculties, so that all facets of the community may be served. In countries which can afford to develop in this direction it can be done but in South Africa it is simply impossible." (1)

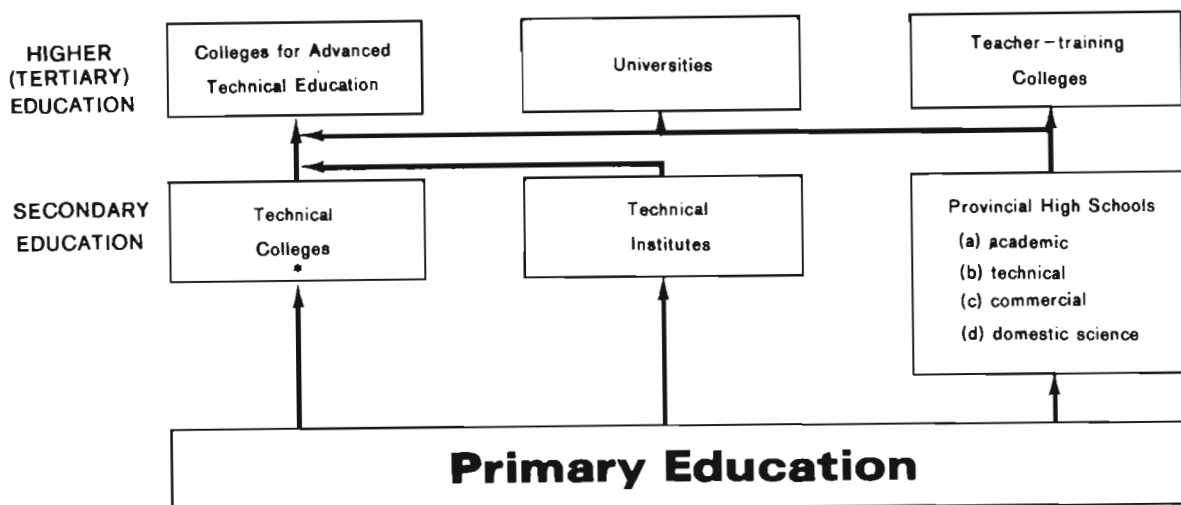
More recently the present Minister of National Education, Senator J.P. van der Spuy, corroborated the evidence presented by his predecessor when he stated in 1970:

"Die twee studieterreine, universiteitsvlak en gevorderde tegniese onderwys, kan ook as vertikaalparallellopend gesien word, elk met sy eie aard. Die universiteit spits hom toe op die diepere aspekte en volle omvang van die kennis. Die Kollege vir Gevorderde Tegniese Onderwys daarenteen lê hom toe op die regstreekse toepassing van kennis en vaardighede in die handel en nywerheid." (2)

It would therefore appear that, for the foreseeable future at least, the CATEs will have to resign themselves to a place in the tertiary education sector which is quite clearly beyond high school level but below that of the universities. The following diagram helps to clarify the place occupied by the CATEs in the South African educational system for whites:

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- (1) Republic of South Africa - House of Assembly debates, 1967 (Hansard). Cape Town: Govt. Printer, 1967. (p. 1337)
- (2) Address to Cape CATE given by the Minister of National Education on 22 May, 1970.

DIAGRAM 10

The Place of the Colleges for Advanced Technical Education

*(In areas where there are no colleges for advanced technical education the technical colleges offer post-matriculation courses as well)

Source: Adapted from a publication by the Witwatersrand CATE entitled Advanced Technical Education (p. 3) (no date given).

Since the CATEs have no right to grant degrees or undertake any work which is specifically designed to lead to degree credit, their position in the hierarchy of tertiary education will always be less highly regarded than the universities. Further entrenching their place as a less-than-university-level institution is the fact that, apart from a few minor exceptions, universities do not grant any recognition for diplomas or qualifications obtained at CATEs and generally their diplomates are required to start afresh at the first year university level if they wish to obtain a degree.

The word "technical" in their new title is perhaps misleading since the colleges are, in fact, more "polytechnic"

in character (1) which implies that they are devoted to tertiary education in a wide-ranging selection of programmes and courses including many aspects of engineering, art, pharmacy, commerce, home economics, and other fields.

A.J. van Zyl, has also stated that he feels that CATE is not the correct title for these institutions since their functions extend far beyond those of "technical" education and they offer many subjects which by no stretch of the imagination could be termed "technical". For this reason he proposed the name "Colleges for Advanced Education" which is shorter and describes more precisely what these colleges do.

(b) The Status of the White CATEs

Although alike in many ways and offering similar services to a student-body which could belong to any of the six institutions, yet the colleges each have their own ethos and in some instances they are very proud of their achievements in particular fields which are exclusively their own.

More than one CATE Director remarked to the author: "Once you have seen one CATE you have seen them all!" However, this was undoubtedly an exaggeration since each CATE is characterised by certain aspirations and peculiarities and although all the CATEs offer a wide range of identical national diplomas and certificates, and short courses based on the same type of experiences, they nevertheless each approach the work in their own individual way.

The CATEs (except for Port Elizabeth) are described as autonomous according to official sources yet an examination of their true status reveals rather a "semi-autonomy" in overall running of the institutions since the Department of National Education (DNE) still plays an important rôle in their functioning. The CATEs are truly autonomous in certain matters and they are run by Councils, but any institution which has to refer to the DNE for approval of

(1) The word polytechnic is defined in Chambers Dictionary as "an institution in which many arts are taught".

senior posts and is dependent on the Government for so much of its financial support can never really know genuine autonomy. The fact that the CATEs offer so many programmes which are devised and controlled by the DNE also reduces their autonomy since the DNE inevitably sends them directives and instructions relating to their national diplomas and certificates. Yet another indication of the qualified autonomy which the CATEs enjoy is provided by the regular visits to these institutions each year from DNE inspectors although it must be conceded that these inspectors are usually only performing an examining function.

(c) Programmes and Courses - Some Examples

Since the CATEs provide substantially the same programmes and courses in many different fields, a brief description of the main offerings in broad categories should be sufficient to indicate the range and nature of the curricula provided. (1)

(i) Short Courses (Adult or Community Education)

Most CATEs offer short, intensive, part-time courses in many branches of cookery, dressmaking, millinery and upholstery. These are usually offered by the department of home economics.

Within art departments such courses as Photography for Beginners, Art Appreciation, Graphic Art, Interior Decorating, Ceramics, Modelling, Saturday Morning Art Classes, and so on, are provided.

In the field of secretarial education short courses include a Pre-University Typewriting Course for Beginners and Elementary Accounting and Office Routine.

Various engineering departments provide courses such as Motor Car Owner Drivers Course, Practical Welding and a

(1) It should be noted that the Vaal Triangle CATE differs somewhat from the other five CATEs since it caters only for post-school full-time work and because it concentrates mainly on engineering and commerce and does not offer such a broad range of subjects. One of the reasons for this more limited approach is the existence of three technical colleges in the Vanderbijlpark area - these colleges therefore cater for other levels and subjects.

Machine Shop Course.

Since no entrance qualifications are required for such courses they could well be termed community services work and their main objective is to offer constructive and interesting opportunities for adults and young people to further their knowledge and skills.

(ii) Short-Cycle Tertiary Education

A large number of programmes and courses offered by the CATEs fall quite distinctly into this category since they last either one or two years (full-time) or three or four years (part-time) and the work is of a post-secondary level usually requiring at least a school-leaving certificate or its equivalent for entrance.

Examples of such courses include: National Diploma in Public Health Nursing (one year); National Secretarial Certificate (one year); National Diploma in Oral Hygiene (two years); National Diploma for Health Inspectors (three semesters full-time at a CATE followed by six months practical experience); National Certificate in Ceramic Technology (two year sandwich course); National Diploma in Parks and Recreation Administration (two years part-time CATE attendance of one day per week); National Certificate in Photography (one year part-time); National Diploma in Photography (two years part-time for those with the National Certificate).

More than any other institution in the country the CATEs could be said to be the home of most genuine short-cycle tertiary education.

(iii) Long-Cycle Tertiary Education

Many programmes are offered by the CATEs which are not genuine higher education (or university equivalent) although they are spread over three or four years full-time (or various combinations of full- and part-time work or sandwich courses) and are very definitely designed for post-secondary students.

Such programmes would include: National Diploma in Art and Design in Graphic Design (three years); National Diploma in Cost Accounting (three years); National Diploma in Physical Metallurgy (four year sandwich programme); National Diploma in Sugar Technology (three years divided equally between a CATE and a place of employment); National Diploma in Town and Regional Planning (four year sandwich programme).

What distinguishes these programmes from the short-cycle category is the fact that they extend over a longer period.

(iv) Advanced Programmes (Higher Education)

A number of programmes offered at the CATEs require of students a matriculation exemption and they are therefore of a higher academic standard than most CATE programmes or courses.

For example, five of the CATEs provide a Diploma in Pharmacy which involves four years of full-time study followed by one year of "improvership" which is done outside the training institution. The course leads to a basic qualification which allows registration by the South African Pharmacy Board. Entry to the course is open only to applicants who have a matriculation exemption with passes in mathematics and at least one science subject.

A strong case has been made by the CATEs for fuller recognition to be given to their Diploma in Pharmacy. The CATE diploma has been acknowledged by the Pharmacy Board as equivalent to a BSc (Phar) which is offered at the Universities of Rhodes and Potchefstroom. The South African Pharmacy Board does impose demands in respect of the contents of the courses which have to be fulfilled by the two universities and the five CATEs offering pharmacy as a subject. Although the same professional status is accorded both qualifications this controversy about the relative values of a diploma or a degree can only be solved either by some body being granted the right to award a degree to the CATE pharmacy diplomates or else the CATEs should relinquish this work altogether.

In a recent study (1) on this question of the awarding of degrees in non-university institutions, Biebuyck recommended that the CATEs should cease training pharmacists and that this become the task of the university. Professor Offermeier of the University of Potchefstroom also supports this viewpoint in an article written in 1968 and states that the pharmacy programme is beyond the scope of the CATEs:

"Ons sal nie langer kan voortgaan om voor to gee dat 'n professionele opleiding aan 'n tegniese kollege dieselfde erkenning kan geniet as 'n universiteitsopleiding nie. Ter wille van die toekoms van die apteekwese in ons land is dit nou tyd dat ons apteekwese alleen aan universiteite aanbied en ook aan nie te veel sentra nie." (2)

However, Biebuyck did propose that pharmacy diplomates, who wish to undertake post-graduate study at universities which offer pharmacy, be accorded the necessary recognition and receive permission to do so.

The five CATEs are quite clear in their minds that they want to retain their pharmacy sections for several reasons:

(i) They have a longer academic year, more lectures and greater practical facilities than the universities (at least that is their contention);

(ii) They have well-qualified staff many of whom have had considerable practical experience;

(iii) Being an advanced course which enjoys full professional recognition it lends status to the CATEs and is one of the few university-equivalent programmes available at these institutions.

Yet another example of an advanced programme is that of the Diploma in Optometry offered exclusively by the Witwatersrand CATE. This Diploma is, in fact, the only recognised training in optometry in South Africa and after

(1) Biebuyck, L.J.T. - Degrees by institutions other than universities - possibility and desirability. Pretoria: HSRC, 1973. (Report No. 0-15)

(2) Offermeier, J. - "Opleiding en die Toekoms van die Apteekwese". Volkshandel, 29(10), Des. 1968: 11-15. As quoted in Biebuyck, L.J.T. - Ibid. (p. 12)

four years of full-time academic and professional training the students are awarded the Diploma in Optometry (D Optom) of the South African Optometric Association. This Diploma is recognised by the South African Medical and Dental Council and the Rhodesian Medical Council for registration purposes. A full matriculation exemption with a satisfactory pass in mathematics is required for entrance to this programme.

This Diploma is a university-level programme which has been attempting to gain greater recognition. It is recognised for post-graduate study at some of the American Optometry Schools and since it enjoys full professional recognition in this country it would be reasonable to ask whether it should not be accorded degree status as has been proposed for the Diploma in Pharmacy.

The Diploma of the South African Institute of Secretaries and Administrators is a third example of a programme offered by the CATEs which is considered to be of advanced standing since it also requires a qualification which entitles the candidate to university entrance.

Another type of advanced programme is the three-year part-time Diploma in Advanced Management offered by some CATEs for the South African Institute of Management. This differs from most other CATE programmes since the entrance qualification is a university degree, a national diploma or membership of a professional institute (with special exemption offered in some cases to mature students in senior positions).

Programmes such as those in pharmacy and optometry and others, have helped create a better image for the CATEs and do support claims made by CATE staff that university-equivalent salaries should be paid to those members of the academic staff who are doing work of a truly "advanced" level. An examination of the qualifications of CATE staff reveals many who have top university qualifications and in some instances CATE lecturing staff are better qualified than many university academics. The existence of the "advanced" programmes does highlight the discriminatory CATE salary structure when it is compared with the salaries of university

people with equivalent or lower qualifications who also probably have a much lighter weekly load.

(d) The Special Case of Teacher Training

The National Education Policy Amendment Act No. 73 of 1969 decreed that "the training of white persons as teachers for secondary schools may be provided at a university only". This meant in effect that the five CATEs, which had been training vocational (secondary) teachers for some years (and also before their elevated status) would not be allowed to enrol any new students for this work with effect from January 1973. Those National Teachers' Diplomas in Commerce, Home Economics, Technology (Technical and Workshop), and Art, which had been offered at most CATEs could now no longer be offered and a great deal of uncertainty was evident in both the universities and the CATEs.

However, the Faculty of Education at the University of Natal, (1) realising that they had neither the specialist staff, nor the facilities to cope with such an influx of students, requested permission from the Minister of National Education to run these specialist programmes by using the CATE staff and facilities. The University of Natal was given permission to enrol students in 1972 for a Secondary Teachers' Diploma in Art which would eventually be granted by the University. The students (who need a Senior Certificate for entrance) are registered both at the University and the Natal CATE and the facilities and teaching staff of the CATE are used although the University has final control of the operation. Syllabuses for these new courses were drawn up by the University in close consultation with senior CATE staff and those lecturers who would be involved. In this way the University is complying with the legal requirement that they should conduct all secondary teacher training. The Natal CATE is of course still completing the

(1) The University of Natal was the first institution to start the interesting and logical pattern of liaison and co-operation with the Natal CATE which has spread to other universities and the CATEs in their areas.

two-year part-time National Teachers' Diploma (Technical and Workshop) and the three-year full-time National Teachers' Diploma (Commerce, Art or Home Economics) for those students who have enrolled but these Diplomas are now in the process of being replaced by the new four-year University-based qualification.

This unusual, but sensible, arrangement has been granted Ministerial permission to continue during 1973 and 1974 and three more diplomas have been added to the list. As from January 1973, a Higher Education Diploma (Commerce) and a Higher Education Diploma (Home Economics) were also offered under the aegis of the University of Natal, while in 1974 yet another programme will be added, namely, the Higher Education Diploma (Industrial Arts). (1) It now seems likely that the Minister will take steps to amend the Act which has caused this dilemma in order to legitimise the arrangement between CATEs and universities which now exists.

Other universities have also decided to make use of the precedent established by the Natal case and have also designed similar agreements after having gained the Minister's permission. The University of Cape Town, in collaboration with the Cape CATE, started offering two four-year programmes (2) in January 1973, namely, a Higher Teachers' Diploma in Commerce and a Higher Teachers' Diploma in Home Economics.

For the first two years and part of the third and fourth years the students will attend lectures and practical work in their specialist subjects at the Cape CATE and in the third and fourth years will take professional teacher-training courses in the Faculty of Education at the University of

(1) With effect from January 1973, the University of Natal decided to call its diploma the Higher Education Diploma with the speciality mentioned in brackets. The provision of the new programme in 1974 will mean that for the first time there will be a full-time four-year programme for industrial arts teachers.

(2) In order to comply with Act 39 of 1967 (as amended) all secondary teachers have to train for a minimum of four years.

Cape Town. As with the arrangement in Natal the entrance requirement for students will be the possession of a valid School Leaving Certificate.

At the University of Port Elizabeth an agreement has been reached whereby the Port Elizabeth CATE assists the University with the practical work for the four-year Higher National Teachers' Diploma. As from 1973 the CATE was responsible for the work done in woodwork and metalwork, typewriting, shorthand, practical art subjects and physical education.

These instances of close collaboration between universities and CATEs lend strength to the argument that these institutions should complement each other and proves that there are areas where liaison and co-operation are possible.

(e) The Six White Colleges - Summary

Although the six white CATEs in South Africa are different from the American Community Colleges and other institutions of this type which perform mainly a more definite type of short-cycle training or education for transfer, they nonetheless align themselves quite closely with the CAATs in Ontario, the IUTs in France and similar institutions offering short-cycle programmes which do not generally lead to a degree but rather to "terminal diplomas". (1)

The South African CATEs do offer a large number of programmes and courses which could quite clearly not be called short-cycle tertiary education since they last for a period of three or four years and are more aptly described as long-cycle tertiary education. However, these institutions do also offer a considerable number of programmes and courses lasting one or two years which are most certainly in the field of short-cycle tertiary education.

(1) The expression "terminal diploma" is not ideal since it implies that no further study can be undertaken. However, since it is true that most of these diploma students do not undertake further study after completing their diplomas they could well be called "terminal diplomas".

The CATEs also provide the public with a variety of short courses ranging in duration from a few weeks to a few months which are typical of courses offered at most short-cycle tertiary institutions throughout the world.

Some links with universities have been established by the CATEs and although tenuous they do provide a foundation for the construction of a strong, flexible bridge between these institutions in the future. It would obviously be unwise to assume that the CATEs are destined ever to be more than a valuable non-degree sector within the tertiary education structure since authoritative statements have indicated otherwise. However, no thinking person is likely to deny the desirability of carefully delineated links being established which will provide talented CATE students with a means of access to degree courses once they have proved their competence.

The place of the CATEs in the tertiary education structure now seems firmly entrenched especially when one considers the steady rise in their enrolments of both part-time and full-time students. The fact that the Government is willing to spend large sums of money on the CATEs is borne out by the tremendous expansion in building and facilities which has been provided for. Except for the Vaal Triangle CATE which started on a new campus and has room for future development, all the CATEs are in the process of moving into, or planning new campuses.

Port Elizabeth CATE is due to move at the end of 1973 to a vast new campus at Driftsands near Summerstrand and when this move has been completed it will leave behind all its secondary work at the old town campus and undertake only tertiary work in future. The Natal CATE has recently acquired land for the construction of a much-needed new campus and planning is well under way. Pretoria CATE has also recently finalised the selection of a site for its new campus at Daspoort Ridge and it is hoped to move at least some students to the new campus by 1975. Witwatersrand CATE has purchased a new campus site in Doornfontein, Johannesburg, and since

this area forms part of the urban renewal scheme in the city it will take several years to clear the site and start the building programme. The Cape CATE has been examining ways of expanding their campus for some years and many possible new sites have been considered. However, the College is hoping to be able to extend their present city site.

Development of this sort augurs well for the future of the CATEs and indicates the extent to which they are providing a service to the community. In coping with increasing numbers of school-leavers, in extending educational opportunity to hitherto excluded social groups, in creating new structures of study, in recruiting different sources of staff, in linking tertiary education with the outside world, and in a number of lesser ways, South African technical education, through the CATEs (1) is bringing about a profound and distinctive social revolution.

(f) M.L. Sultan Technical College

(i) Introduction

Technical education for Indians dates from 1928 when the Natal Workers' Congress was formed. The first classes were held in 1929, mainly for adults, at the Hindu Tamil Institute during the evenings and the Indian teachers gave their services free.

The Indian Technical Education Committee developed from these early attempts. The concept of a technical college became feasible in 1942 when Hajee M.L. Sultan donated R25,000 towards the creation of such an institution. The M.L. Sultan Technical College was eventually established in 1946.

(1) As mentioned in Chapter One there are a number of technical colleges which exist in centres where there are no CATEs. Some of the large technical colleges, such as those at Pietermaritzburg, Kimberley, East London and Bloemfontein, offer a variety of advanced (tertiary level) programmes and courses. Some other institutions which were formerly known as apprentice schools have now become technical colleges but their work is at a secondary (vocational-technical) level.

In that same year the Minister of Education, Arts and Science proclaimed the College a Technical College in terms of the Higher Education Act No. 30 of 1923 and from that period it functioned under the aegis of the Department of Education, Arts and Science. The Durban Corporation then granted 6½ acres of land to the College in 1952 and building soon started on the site occupied at present.

The new buildings were first used in September 1956, and until then classes were conducted at Sastri College, Hindu Tamil Government-aided Indian School and Kathiawad Government-aided Indian School.

Further expansion took place in 1959 when the Pietermaritzburg Municipality donated 2½ acres of land to the College to build a branch in that city. Previous to 1962, when the new branch was opened, technical education for Indians in Pietermaritzburg had been conducted since 1939 in part-time classes by the Pietermaritzburg Technical Institute using the HYMA building and from 1947 the Nizamia Muslim School.

Part-time evening classes were started at Stanger in 1959 and in 1960 the Borough of Stanger donated land to the College. The new building was occupied in 1961 as the second extension centre outside the main College in Durban.

In 1963 the College ceased to function under the aegis of the Department of Education, Arts and Science as it had done since 1946. It now came under the jurisdiction of the Department of Indian Affairs. The Indians Advanced Technical Education Act No. 12 of 1968, elevated the College to the status of a college for advanced technical education placing it on the same level as the six white CATEs.

The College is autonomous in that the control of all finances is in the hands of the College Council which administers the funds available from the Department of Indian Affairs subsidy, income from fees and grants and donations from all other sources. The College Council is also responsible for the employment and welfare of all staff, planning of the educational programmes as well as the development of buildings and funds for this purpose.

(ii) Programmes and Courses - Some Examples

Full-time opportunities are offered in the following divisions:

Commerce, Secretarial Practice and Management - various national diplomas varying in length from one to three years e.g. Chartered Institute of Secretaries (one year) and National Diploma in Commerce (three years). These courses have a Senior or Matriculation Certificate entrance requirement.

Home Economics - examples of these programmes include National Diploma in Dress Design (three years); National Diploma in Public Health Nursing (one year). These courses are also at tertiary level.

Division of Technology - National Diploma for Medical Technologists (four years); National Diploma for Civil Engineering Technicians (two years); National Certificate for Architectural Draughtsmanship (one year). These courses are at tertiary level.

Hotel and Catering School - National Diploma in Hotel Management and Administration (three years) which is at tertiary level.

Teacher Training - Teachers' Diplomas in Commerce, Home Economics, Industrial Arts and Physical Education are offered (all three years) and they too require a Senior or Matriculation Certificate for entrance.

Technical High School - starting at Std. VII level a full secondary course is offered free with academic subjects and Workshop Theory and Practice.

Some of the above divisions also offer special courses and programmes (mainly free) for people with lesser qualifications but who can do full-time study. An example of this work would be the free Nursery School Aides programme lasting two years and only requiring a Junior Certificate for entrance.

The Division of Home Economics, the Hotel and Catering School, the Division of Commerce, Secretarial Practice and Management and the Division of Technology also offer most of

their programmes on a part-time basis as well as various shorter courses which do not require any entrance qualifications. Part-time opportunities are also offered by the division of Physical Education, Health and Recreation (Judo, Karate, Ballet, Speech Training etc.) and by the Evening School for Commercial and Academic Studies (various National Certificates at secondary level and special intensive courses such as Comptometry, Special French, Royal College of Surgeons Entrance Examination etc.).

An examination of the College Annual Report for 1972 reveals that most of the students (about 75%) are enrolled in courses or programmes which fall under the heading of secondary work while the remaining students are enrolled in post-secondary studies. This does imply that the College will still have to cater for some time to come for these less-qualified students and that the full assumption of its place as an "advanced" institution will come only gradually as more and more Indians achieve a Senior Certificate.

(iii) The College in the 1970s

Owing to the remarkable increase in enrolment over the last decade the College is planning for great expansion during the next few years since this is the only technical institution of its kind for Indians. In 1968 the enrolments at all branches of the College were 5,655 while by 1972 they had risen to 6,848 students.

Many of the courses and programmes offered at the College do fit into the category of short-cycle tertiary education and the fact that enrolments are increasing annually does support the contention that there is a developing trend towards short-cycle tertiary education.

It is interesting to note that in 1972 of the 441 people employed on the teaching staff of the College 227 were Indians. This reveals a different situation from that prevailing in most "advanced" institutions for non-whites.

The Rector of the College, Dr. A. Solomon summed up the future development of the College in this way:

"This major development and expansion of the college is due to an unprecedented increase in the number of students following post senior (tertiary) studies, and because many new careers are now open to Indian students which were previously reserved for Whites only...."

"Most of these opportunities have only become available in the last year or two whereas in commerce openings have been available for some considerable time and are increasing annually." (1)

(g) Mmadikoti College for Advanced Technical Education

(i) Labour Shortage

There is no doubt that a great shortage of skilled semi-professional workers exists among the Bantu people and that this shortage will increase rapidly. In a recent article published in the South African Journal of Science, Professor C.H. Wyndham, Director of the Human Sciences Research Laboratory of the Chamber of Mines, stated that manpower problems on a spectacular scale will face this country unless urgent action is taken. Professor Wyndham supported his argument by stating that to maintain present living standards South Africa would need a growth rate of 5½% a year. It has been estimated, said Professor Wyndham, that by 1980 we will need 3.5 million skilled workers to keep up with this vital growth rate. The maximum number of whites available by this date will be 1.75 million economically active people many of whom will not be skilled workers. From this it follows that at least 1.75 million skilled non-white workers will be needed by 1980 yet there is not a single technical institute for Africans in any of the large towns in the Republic. Those which do exist produce a small number of trained people in areas remote from the industrial complexes of the country. In his article Professor Wyndham concludes that the present tempo of academic education and technical training of non-whites is hopelessly inadequate and that there are few signs that industry and commerce are providing much

(1) Article in The Daily News of 22 February, 1972.

assistance. (1)

Out of a total population of more than 15 million in 1972 only about 26,000 Africans gained qualifications which would fit them for skilled occupations. A total of 22,592 passed Std. 8, another 2,911 passed Std. 10 while 1,223 graduated from trade technical and vocational schools and passed advanced technical courses. Graduates, post-graduates and students gaining university certificates and diplomas accounted for 332 (1971 figures). Even if this educational performance was improved by 26,000 every year between now and 1980, giving an annual 52,000 entrants to skilled occupations, we would still be more than one million short by 1980.

It would therefore seem clear that Professor Wyndham's plea to pour resources into African education is totally valid.

Only by improving skills (and thus productivity) could further pay increases be granted to many categories of African workers. Many Africans are now approaching the maximum salary they are worth in terms of business economics. Further pay increases without corresponding gains in productivity will merely make it uneconomic to employ them. Since the trend in industry is towards more technology including bigger and better machines needing skilled men to handle them, African workers will have to be trained for these higher skills otherwise they will become unemployable.

The president of the Port Natal Chamber of Industries, Mr. E.G. Hotchkiss addressing the annual general meeting of the Chamber held in April 1973, outlined labour shortages and said that in making recommendations to the Government attention was being focused on the African population group - because it is the most likely field from which assistance can be obtained. Mr. Hotchkiss also stated that unless it is generally accepted by all people and at all levels that

(1) Wyndham, C.H. - "Environmental Problems of Man in South Africa". South African Journal of Science, Volume 69, No. 2, February 1973. (pp. 47-49)

there is need for the employment of Africans in more skilled capacities, it will be too late and the economy will be running down. He also concluded that this is one of the greatest problems facing our country at the present time.

(ii) Advanced Technical College

The only advanced technical institution for the Bantu is to be found at Seshego near Pietersburg in the Transvaal. It is known as Mmadikoti College for Advanced Technical Education. Since 1968 this College has been training Bantu technicians, especially for the developing Bantu homelands. The courses have been established as follows:

(i) In January 1968, a four-year course for technicians in agricultural engineering and a four-year course for technicians in municipal civil-engineering.

(ii) In January 1970, a four-year course for survey technicians.

(iii) In January 1972, a three-year course for geology technicians.

In all four courses the first year is a compulsory full-time year at the College and the entrance requirement is a Senior Certificate. During the second year the students spend one semester at the College for theoretical training while the second semester is devoted to practical work and training with their employers. If one examines the statistics as presented below it becomes clear just how pathetically small are the numbers of students being trained:

Geological Technicians (Bantu Mining Corporation)

First Year 12 Second Year 8 Third Year -

Students Who Have Completed Courses

Engineering Technicians

<u>Year</u>	<u>Course</u>	<u>Passed All Subjects</u>	<u>Must Still Pass One or More Subjects</u>
1971	Agricultural (9)	5	4
	Municipal-Civil (7)	4	3
1972	Agricultural (7)	4	3
	Municipal-Civil (6)	5	1

TABLE 4

Students Enrolled at Seshego on 7th August, 1973.

<u>Homeland</u>	<u>Engineering Technicians</u>				<u>Survey Technicians</u>			
	1st Year	2nd Year	3rd Year	4th Year	1st Year	2nd Year	3rd Year	4th Year
Kwa-Zulu	3	3	1	2	1	2	3	-
Basotho Qwaqwa	-	1	-	1	-	1	-	-
Lebowa	3	2	2	2	1	1	2	2
Gazankulu	1	1	1	1	1	-	-	2
Ciskei	3	3	3	1	1	-	-	-
Transkei	6	-	1	2	4	-	1	2
Venda	1	1	1	1	1	-	2	1
Bophutatswana	4	-	2	2	2	2	4	-
Total	21	11	11	12	11	6	12	7

(55) (36)

The first group of Survey Technicians will complete their course in February 1974. (1)

There is little doubt that a handful of students such as those indicated above will not be able to supply the vast needs of the Bantu homelands where seven million people are situated nor the needs of the other eight million Bantu found in white areas and mainly in white urban complexes. It would appear vital, in the light of the evidence already presented, that more institutions for Bantu advanced technical education should be established and that more of the scholars who pass Std. 10 at the end of each year should be encouraged to enter this field. (2)

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- (1) All the above statistics were presented in an official publication which was under the heading of the Department of Bantu Education, Seshego, 7th August, 1973. (3 pp.)
- (2) While Mmadikoti is the only Bantu CATE it must be acknowledged that other technical colleges exist where certain courses of a tertiary nature are offered. One such institution is Edendale Technical College near Pietermaritzburg.

While acknowledging that at present the number of Bantu pupils emerging from Std. 8 and Std. 10 is too small to warrant a major programme of CATE building, a start must be made now since the number of school-leavers is increasing each year. It would also seem wise to concentrate on the applied sciences since the Bantu are better able, at present, to cope with the more practical fields whereas the abstract, theoretical studies at a university prove beyond the capacity of many young people emerging from schools.

There will be more than enough available places in the three Bantu universities for many years to come (1) and at this early stage in the intellectual development of the Bantu a greater need obviously exists for institutions of the CATE type which provide the short-cycle para-professional courses not generally offered by universities.

In addressing a conference on Bantu education held by the South African Institute of Race Relations in Johannesburg in 1969, Dr. E.G. Malherbe stated the following words which sum up this section admirably:

"Bantu education is administered and financed separately as if it were a completely isolated entity in South African life, yet when it comes to manpower we are all in the same boat. Bantu manpower is inextricably bound up with the running of our industries, our agriculture, our public service, and our homes. It is from the point of view of the inevitable integration of the Bantu, his purchasing power as well as his labour, in the economic fabric of the Republic that (one wishes) to look at the relationship between Bantu manpower and education. On this level, all the South African races are irrevocably interdependent." (2)

(1) Not only have the three Bantu universities a great deal of potential for expansion but UNISA presents them with unlimited opportunities for correspondence study at university level.

(2) Malherbe, E.G. - Bantu Manpower and Education. (Paper presented at the SAIRR Conference on Bantu Education) Johannesburg, January 1969. (p. 1)

(h) Peninsula College for Advanced Technical Education

(i) Establishment

In accordance with parallel developments in other fields the responsibility for providing technical classes for Coloured apprentices was gradually transferred to the Department of Coloured Affairs (as it was then called). This transfer started in April 1962, and was completed during 1964. During this period the Coloured Persons Education Act No. 47 of 1963 was passed and the education of the Coloured community was transferred from the provinces to the Department of Coloured Affairs with effect from 1964.

Training of Coloured apprentices and other technical and vocational work which had previously been done at a branch of the Cape Technical College (for whites) was now considered to be so essential that the Peninsula Technical College was established in 1964. This College conducted both secondary and tertiary training and as the demand for advanced work (i.e. post-secondary) increased the resolve was taken in 1965 to make this College into an advanced institution which would one day offer exclusively tertiary education programmes and courses.

By 1966 building had started on a new Peninsula Technical College campus in close proximity to the University of the Western Cape in Belville South (Proteaville). Classes started in the new buildings at the beginning of 1967 and in order to attract a viable number of students both secondary and tertiary work was offered on a full-time and part-time basis. From the outset it has been the intention of the authorities to gradually shed the secondary level work done at the College and in accordance with this policy the Vocational School (which had been a part of the College from its start in 1964) was separated from the College in 1967.

(ii) Administration and Control

The College became the responsibility of the Administration

of Coloured Affairs (1) in 1969 and all money for the running of the College and for Coloured personnel comes from the CPRC. White staff members of the College are actually in the service of the Department of Coloured Relations and their salaries are paid by that Department although they are seconded to the service of the Administration of Coloured Affairs.

The College is run by an Advisory Council of nine members which was first appointed in 1966 while the new campus was being built. This Council is appointed by the Minister of Coloured Affairs for a period of three years. At the start of 1973 when the third Council was appointed two Coloureds were included for the first time. During the first years of the College when there had been an all-white Council, a sub-committee of five Coloureds had existed to represent the Coloured community in the running of the College. However, with the appointment of two Coloureds to the Council this sub-committee has now fallen away since it is the Minister's intention to appoint progressively more Coloureds to the Council each three years.

Although there is a policy of Coloured incumbency at the College so few qualified Coloureds apply for vacant posts that the teaching staff is almost entirely white. There are 35 full-time white lecturers and only one full-time Coloured lecturer at the College. However, there are more Coloureds on the part-time teaching staff since they are able to teach at the College while still holding down another full-time job.

(1) With the ratification of the Coloured Persons Representative Council Act No. 52 of 1968, and the subsequent election and establishment of the Coloured Persons Representative Council (CPRC) in 1969, an Administration of Coloured Affairs was created to administer the matters which fall within the purview of the CPRC. As a result of this new arrangement, the Department of Coloured Affairs was abolished and replaced by a Department of Coloured Relations whose task it is to maintain liaison between the Administration of Coloured Affairs and the Central Government.

(iii) The Present and the Future

The growth of the College has been quite rapid since there is an increasing demand from the Coloured community for technical and vocational education at the tertiary level. (1) The following enrolment figures indicate the last seven years on the new campus:

TABLE 5

Student Enrolments at the Peninsula College for Advanced Technical Education

Students	1967	1968	1969	1970	1971	1972	1973
Full-time & Part-time	199	281	376	451	880	924	1,031

In 1972 the Administration of Coloured Affairs gave notice of the fact that the College was to be raised in status and was henceforth to be called the Peninsula College for Advanced Technical Education. The intention which had existed since 1965 to concentrate entirely on advanced or tertiary work has now been brought closer to fulfilment and although some secondary work still remains in the College it will be removed as soon as other facilities become available.

At present there are three departments at the Peninsula CATE, namely, Technical, Commerce and Health Sciences.

Within the Technical Department various full-time National Diplomas for Technicians are offered which vary in length from two to three years and require a Senior Certificate or its equivalent in order to enter. The NTC III is also offered to apprentices in various trades while the Printers apprentices (with only a Std. 8 entrance level) are also

(1) It is interesting to note that the Coloured Technical College, Durban (and in Pietermaritzburg), under the auspices of the Administration of Coloured Affairs, has now started offering some courses at tertiary level so that the Coloureds in Natal may be provided for.

catered for. Full-time training for Technical Teachers (Metalwork and Woodwork) is available and this programme lasts three years and has a Senior Certificate entrance requirement.

The Department of Commerce provides a selection of National Certificates and Diplomas, for example, the National Secretarial Certificate (one year full-time) and the National Commercial Diploma (three years full-time). The National Diploma in Public Administration and the National Diploma in State Financing and Accounting are also offered as correspondence courses. Short Business Management Courses are available on a part-time basis while the CIS will be offered from 1974.

The Health Sciences Department provides two full-time courses, namely, the National Diploma in Health Nursing (one year) and the National Diploma for Health Inspectors (two years). Within this Department there is also a Textile Trade Certificate (Std. 8 entrance level - two years part-time) while the Hairdressing apprentices (Std. 8 entrance level) are still being trained.

Although the Peninsula CATE is provided for the use of Coloured persons, Indians are allowed to enrol (if they have the permission of the Minister of Indian Affairs) since there is no institution of this type available for Indians in the Cape Province.

This College offers a number of courses which fall quite distinctly into the category of short-cycle tertiary education. Programmes and courses of this type are clearly important to the Coloured people at this stage in their intellectual and vocational development since the dropout rate at Coloured schools is alarmingly high and so few young people do actually gain a matriculation exemption or school-leaving certificate. Many Coloureds feel capable of completing a short-cycle tertiary course or programme but are apprehensive when confronted with a long-cycle or degree programme because so few Coloured people have the social or intellectual background which is needed to approach genuine

higher education confidently. Thus for the Coloured community the provision of a wide variety of short-cycle tertiary education programmes would appear to be a sensible way of providing a stepping stone to greater fulfilment in the future.

The youngest of all the CATEs is quickly assuming the characteristics of the other CATEs and within a short while it will be able to take its place as a full-fledged institution for tertiary education.

D. Tertiary and Quaternary Education

Emerging from this brief analysis of the range of post-secondary education institutions in South Africa is the need to distinguish quite clearly between different stages of education and the functions to be served by different institutions.

The universities are different from the CATEs, the colleges of education, the technical colleges, and various institutions providing adult education. The universities are more selective (in most instances) than all these other institutions and they reserve to themselves exclusive degree-granting rights. They are also the traditional home of advanced, intellectual research work and their programmes and courses are normally at a higher level, and are more abstract, than those at all other post-secondary institutions. Thus it would appear that except for the universities' first two undergraduate years and the few isolated programmes at CATEs, which reach an advanced level, all university work from the third year onwards could well be labelled quaternary or higher education to distinguish its place in the hierarchy of post-secondary institutions. The emergence of this fourth level indicates, not that the universities wish to be exclusive or isolated, but merely that they are working at an advanced level which is beyond the capacity of the mass.

As more and more young people complete a high school education each year there is a natural expansion in the numbers aspiring to study at a post-secondary level. The advent of large numbers of school-leavers who are qualified to study

further has brought South Africa, like so many other countries, to the brink of mass tertiary education (in the case of the whites). It is also clear that not all these students have the ability or the inclination to undertake a full degree or long-cycle programme leading to genuine higher or quaternary education. For this reason the large numbers of students and mature people who study at CATEs, colleges of education and institutions (other than universities) fall into the category which can be termed the third or tertiary education level. Those students and mature people who undertake short courses or programmes which are not classified as formal diploma, certificate or degree courses could well be classified in another category known as further or continuing education and in some cases, adult education.

If these definitions of tertiary and quaternary education are acceptable then it becomes easier to understand the place and significance of short-cycle tertiary education since much CATE work and the work done at some non-white colleges of education can without doubt be placed in this intermediate stage. If a two-year associateship (as proposed in Sections 3 and 4 of this chapter) should ever be introduced into South Africa then it would unhesitatingly be labelled short-cycle tertiary education even if it was offered at a university as well as other post-secondary institutions.

It is an established fact that a great deal of confusion exists in many countries over the use of the term "higher education". While it appears to be internationally acknowledged that the term "tertiary education" is acceptable to indicate any institution at a post-secondary stage (and this is the use made throughout this thesis of that term because it follows logically after primary and secondary education) there does not appear to be certainty about the meaning of "higher education". In the United States this expression indicates all post-secondary institutions no matter how insignificant or intellectually dubious, whereas in the United Kingdom "higher education" has traditionally been used to indicate the autonomous university sector (although recent

practice is now including the polytechnics and colleges of education in this term).

In order to overcome such confusion perhaps the natural emergence of the universities beyond and above the layer of short-cycle or even long-cycle tertiary education could well result in a clear-cut function for universities at the quaternary level.

3. TERTIARY EDUCATION PROBLEMS AND DILEMMAS FOR WHITES IN SOUTH AFRICA

An examination of the white institutions of tertiary education in South Africa reveals basic problems and dilemmas for which the trend towards short-cycle tertiary education might indicate a solution. Since the non-white tertiary education institutions are relatively small, and, in some instances, have not really established themselves, their problems are often different and relate (as indicated in Section I) to the discrimination which results from the Government policy of "separate development". For this reason the greatest amount of attention has been devoted to the white tertiary education sector.

A. White University Failure Rates

Failure rates in some faculties or departments at some universities are disturbingly high despite the partially selective requirement which demands that students shall have matriculated (i.e. gained an exemption certificate in their Std. 10 examinations).

Evidence in support of this statement comes readily to hand. For example, the University of Natal (Durban campus) recently compiled statistics to indicate the failure rate by faculty or department of all full-time students in their first year of study who entered the University in 1972. (1)

(1) These figures were produced by the Student Advisory Service of the University of Natal during the second half of 1973. It should be noted that if student dropouts during the year 1972 had been counted then the failure rates would have been even higher.

The failure rates were as follows: Faculty of Arts 26.56%; Faculty of Commerce 37.89%; Faculty of Engineering 53.65%; Department of Land Surveying 72.41%; Department of Quantity Surveying 26.92%; Department of Architecture 35.71%; Faculty of Science 45.79%; Faculty of Social Science 16.36%.

The overall failure rate (total number of failures in all faculties or departments calculated as a percentage of the total number of entrants) works out at 37.52% which is still a significantly high figure.

Added verification for the claim that failure rates are fairly high in South African universities is found in a revealing study undertaken for the Joint Matriculation Board (JMB) by Professor H.S. Steyn and entitled A Statistical Study Of The Transition From School To University (1963). Although this study took place some years ago an examination of current failure rates in the ten white residential universities indicates that the failure rates closely resemble those revealed by Steyn.

Unlike the European situation where a great deal of selection takes place before university entrance resulting in older, more mature students and very low attrition and failure rates, the South African student enters a university relatively easily since it does not require a high level of intelligence to achieve the aggregate required for matriculation. Except for restricted, selective entry into certain faculties such as medicine, engineering and some sciences, the South African student has virtually no competition for his place as an undergraduate and he is more or less guaranteed entrance to one or other faculty. This comparatively easy access to a university results in many young people aspiring to achieve a degree because of societal pressures when their inclinations really lie elsewhere - the outcome of this easy access is a high failure rate.

Another reason for the high percentage of unsuccessful students is the "gap" which exists between the average high school senior class and the first year of university work. Most South African school-leavers are totally unprepared for

the situation which will confront them upon enrolling at a university. They have not been taught how to conduct independent research into a topic, how to use a library intelligently, and they have not been shown how to exercise their critical faculties when preparing an assignment. Despite valuable experiments such as The Matriculation Project (1) in which senior pupils at twenty selected high schools were encouraged to develop the facility to think independently without the fear of a final matriculation examination, and despite attempts at most schools to encourage "project work" and better use and knowledge of school libraries, South African matriculants are still generally greatly affected by the very real "gap" which exists.

MacMillan has summed up the situation in the following words:

"The problem of failure in the first year at the university is a serious and a national one."

"Dependent upon faculty, an average of 35% fail the first year, i.e., they cannot proceed to the second year of study. In engineering the average is about 45%, science about 40%, commerce about 35% and arts about 25%." (2)

"The problem of first-year failure will not be easy to solve. It is in essence the culmination of weaknesses which are part and parcel of the whole educational system." (3)

One great problem arising from the high failure rate is that many fairly talented young people, who are not suited, or have not adjusted, to university life are left at the end

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- (1) The Matriculation Project started in the Transvaal in 1966. In October 1964, A Planning Committee met to organise the experiment. On this committee were representatives of the Transvaal Education Department, the high schools, the universities and the JMB. Twenty schools were chosen to be exempted from the formal external Std. 10 examinations and twenty matching schools were selected for control purposes.
- (2) Behr, A.L. and MacMillan, R.G. - Education in South Africa (Second Edition) Pretoria: Van Schaik, 1971. (p. 254)
- (3) Ibid. - (p. 255)

of unsuccessful examination attempts with little else to their credit besides some hard-learned lessons and more maturity. So many of these young people then stop studying and enter jobs which are not necessarily challenging and are often below their mental capacity and a life of frustration results. There must indeed be a considerable reservoir of this sort of talent which has not been correctly channelled and is a source of potential mid-level or para-professional personnel.

B. Lack of a Co-ordinating Body for all Tertiary Education

Since their establishment under the Universities Act No. 61 of 1955 both the CUP and the University Advisory Committee have met regularly each year and done a great deal of constructive work in order to achieve greater liaison among the universities and also between the universities and the Central Government. However, their work is of course restricted to the universities and only occasionally impinges on the work done in the other two tertiary education sectors.

The CATEs have a means of expression and liaison among themselves in the form of The Association of Colleges for Advanced Technical Education in South Africa. This body has not yet achieved statutory recognition and up to the present it has had no formal contact with, for example, the CUP, although such a move has been proposed by the Association and steps in this direction have been planned for the near future.

The colleges of education have no formal body which co-ordinates their activities throughout the country since they are subservient to their respective provincial administrations. However, mention should be made of the provisions made in Act No. 73 of 1969 (the amendment to the National Education Policy Act No. 39 of 1967) for the Administrator of a province to establish a joint advisory and co-ordinating committee for teacher training (JACCTT) for each region. In Natal, for example, a highly effective JACCTT has been formed and has been operating successfully since 1971. The function of a JACCTT is to advise an Administrator, the Department of National Education and the

universities in a province on the co-ordination of teacher training in a province. Members of this body are appointed by an Administrator and include persons to represent universities, colleges of education and teachers' associations in a province. Thus it is clear that although the provincial JACCTTs are not a national body there is sound provision made within each province for liaison among teacher training institutions.

And that is as far as overall co-ordination in the three tertiary education sectors goes. There is no body linking all three subsections of tertiary education and discussions of mutual problems and possible areas of co-operation and recognition of qualifications simply do not take place. (1)

How can planning take place on a national scale when institutions of tertiary education exist in three parallel but isolated pockets? Surely institutions will be suspicious of each other when they exist in close proximity and yet do not enter closely into liaison or interchange ideas?

This situation has arisen partly because of the universities unnaturally exalted position and their assumption of the top place in the hierarchy of academic superiority, and the natural reticence and hesitancy of other institutions to assert themselves in the presence of older and more publicly acknowledged and venerated institutions.

The colleges of education and the CATEs, although performing a different function (and generally at a lower intellectual level), are no less important to the country than the universities since their students are filling vital and important places in the national economy and social structure. For these reasons it would appear to be unwise to relegate these institutions to a less important place and to make them almost entirely dependent on the central or

(1) The Permanent Interdepartmental Committee for Co-ordinating Education Services for All Races cannot be considered as serving the purpose described above since it was established to bridge the gap caused by the separation of the country into four distinct education systems based on racial origin.

provincial authorities since their initiative is undoubtedly restricted by this action. It would also be reasonable to ask why there is no body (a type of Higher Education Commission) to oversee the whole tertiary education sector and in so doing acknowledge and take greater cognisance of these "less noble" colleges. (1)

An almost classic example of a co-ordinated and logically-ordered tertiary education system is provided by the state of California which has roughly the same total population as the Republic of South Africa, namely, 23 million. Within the Master Plan for Higher Education there is a three-tiered structure ranging from the nine campuses of the University of California through the nineteen state college/state university institutions to the ninety-six community colleges. Each subdivision of the structure accepts a clearly defined section of the school-leavers and through the co-ordinating force of the board of regents of the university, the board of trustees of the state college/state university system and the state board of governors of the community colleges, carefully articulated movement from one type of institution to another has been made possible where it is necessary and/or desirable.

There is need for a full-scale investigation into the totality of tertiary education since the Van Wyk de Vries Commission which started its examination in 1968 is concerned mainly with the universities. No report has been forthcoming from this Commission during the last five years and until one is published the colleges and the universities can certainly not resolve their relative positions.

An example of the type of report needed in South Africa to clarify many issues in tertiary education is the report

(1) The creation of a Higher Education Commission would only be acceptable (at least to the author) if such a body was used for the purpose of administration and co-ordination of the institutions in the tertiary sector. A body dominating and prescribing and over-centralising control of tertiary education would not seem rational or desirable in an educational system which could already be described as highly centralised.

of the Martin Committee entitled Tertiary Education in Australia which appeared in 1964. The future growth and pattern of tertiary education was examined by Sir Leslie Martin and his committee and recommendations regarding the major issues and policies were made to the Commonwealth Government, the State Governments, the universities and other tertiary institutions. The Martin Committee took the view that the universities have come to hold too large a place in the whole scheme of tertiary education. They therefore recommended that diversification of the system of higher education should be pursued, especially by making resources available for the expansion, improvement or establishment of non-university institutions. The Committee also insisted that the courses offered in the colleges of advanced education should not be inferior to those taught in the universities but rather that they should be different. (1)

Perhaps a commission of enquiry (on the Martin Committee scale) into the three sections of tertiary education as integral parts of the total advanced sector in South Africa would have a salutary effect on those institutions and help establish more links among them.

Van Zyl recently stated that independent adjustments are made to various sections of commerce or education instead of tackling the problem on a national scale:

"There has been no concerted effort to study the whole field of manpower, to determine priorities, and work out a national manpower plan." (2)

An integrated tertiary education plan or "Higher Education Commission" would help to resolve the problems of the lack of a national manpower plan since commerce and industry are dependent on tertiary education for their top

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- (1) Partridge, P.H. - Society, Schools and Progress in Australia Oxford: Pergamon Press, 1968. (pp. 133-135)
- (2) Van Zyl, A.J. - Optimum Use of Manpower Pretoria CATE 1971. (p. 317)

level and intermediate personnel. (1)

C. Recognition of the Colleges

The colleges of education and the CATEs have always enrolled a certain number of students who have matriculated and are therefore eligible to enter a university. In some instances, for example, in the Diploma in Pharmacy programme at the CATEs, a candidate must possess a Matriculation Certificate. In other words, work of a standard, similar or equal to, university programmes is being done in some sections of these colleges. Yet another example is that of the Optometry diploma being offered at the Witwatersrand CATE. This diploma also demands an entrance level equivalent to the universities. It seems illogical that those students doing university-parallel work should not be granted full transferable credit for their efforts.

Support for greater contact between colleges of education and universities and for greater recognition of college programmes was forthcoming from the Gericke Commission when they reported in 1968. They pleaded for "reciprocal use by the university and the training colleges of each other's staff, knowledge and experience, recognition by the university of certain subjects/courses of the colleges for degree purposes, tuition in certain subjects of their courses at the university and certification." (2)

There can be little encouragement for students at the colleges to aspire to great heights when they know that very little of their work, if any, will be recognised or even acknowledged should they one day want to pursue degree studies at a university. The University of Natal, for example, does allow certain concessions to matriculated students attending

(1) Ibid. (p. 347) - Dr. van Zyl supports the concept of a Higher Education Commission for South Africa to advise the Minister on all matters pertaining to tertiary or higher education.

(2) South Africa (Republic) - Report of the Commission of Enquiry into the training of White persons as teachers (Gericke Commission) Pretoria: Govt. Printers, R.P. 29/1969. (p. 37)

two of the three colleges of education in Natal - it allows a credit of one year in English, Afrikaans-Nederlands and Physics if one of these subjects has been studied for three years but only if the candidate received a high pass mark in that subject during the final college examination. However, these links are tenuous and use is seldom made of them.

This situation contrasts strikingly with the conditions prevailing in most community colleges in the United States or even with the polytechnics or colleges of further education in the United Kingdom where the CNAA degree programmes may be utilised.

Because a student chooses to enrol at one of the colleges, rather than a university, he is not necessarily inferior to a university student and his work at that college might, at times, merit greater acknowledgment from the universities in the form of degree credits. Surely there is need for greater articulation between the universities and the colleges of education and the CATEs? Surely the three divisions of the tertiary sector should complement and assist each other more fully and not work independently almost ignoring one another? Surely agreements could be drawn up whereby the colleges and universities worked out the type of programme and the standard required for universities to fully accept certain courses for credit purposes even if this meant the possibility of the senior institution dictating terms to the junior institution?

While conceding that the orientation of the CATEs is more practical or "applied" than the universities, and that the colleges of education are almost exclusively professionally-orientated, there must be many students at these colleges capable of achieving university standards if the incentive was provided.

D. The Need for an Intermediate Diploma

Unlike the United States where the associate degree is offered by the community colleges and the United Kingdom where the Dip HE is rapidly coming into being, South Africa has no qualification which is interchangeable with all three

institutions making up the tertiary sector.

Not all students (as the failure rate indicates) are capable of achieving a bachelor's degree but many no doubt have the ability to achieve an intermediate qualification which would provide good employment in the middle range of jobs. With such an intermediate diploma to their credit some students could later attempt to upgrade this diploma to a full degree when they had matured more and gained valuable experience in the field. Even if such students did not manage to complete a degree they would not be left empty handed since their diplomas would be of some value to them.

Other students with enough ability to achieve a degree within the basic period required might nonetheless feel restless and eager to earn a salary after an initial period of study (perhaps 1½ - 2 years). The provision of an intermediate diploma would provide such students with a more flexible pattern of study/work and help establish the concept of recurrent or permanent education in this country.

Although speaking more specifically about the future of the colleges of education, A.N. Boyce recently made a statement which supports the concept of an intermediate diploma:

"The provision of a diploma in higher education for all students, not student-teachers only, will take account of the common criticism that students in colleges are sometimes 'trapped into teaching' at an early stage before they know their own minds. The diploma course, similar in some respects to the first part of the concurrent course, will ensure that if students change their minds about wanting to teach, they will be able to leave after two years with a qualification to show for their work." (1)

(1) Boyce, A.N. - "What is the Future of Colleges of Education in South Africa?" Address to the Natal Teacher Education Association, Edgewood College of Education, 24th March, 1973. (p. 9)

Support for such a concept comes from a leading South African educationist, Professor R.G. MacMillan. In a recent article he considered the feasibility of the establishment of a number of "National Colleges" and also the possibility of utilising our leading teachers' colleges in order to create a new type of qualification:

"It should be possible to broaden the admission to such colleges to include those students who would like to take courses in a number of these subjects (i.e. academic courses) and provide a qualification, e.g., an Associateship in Arts or Science after a two-year course.... Lastly, those who show developing academic ability of an acceptable order, could transfer to a university, on a credit-agreement pattern, at the end of the first or second year. Pressure on the universities would thus be eased and it would be possible for them to select students with a clear conscience in the sense that the rejected student would have an acceptable alternative route." (1)

E. Contact with the Community

Indirectly the average white taxpayer contributes a great deal of money towards the maintenance of the universities, the CATEs and the colleges of education. Yet of these three institutions only the CATEs maintain close contact with the public and offer a wide range of activities which can benefit the average member of the community (i.e. non-students).

The colleges of education although financed totally from provincial and Central Government sources offer no service to the community beyond that of training young people to become primary school teachers. Most of these colleges provide no opportunity for the community to use their facilities in any way and after normal lecture hours and during vacations these huge buildings stand empty, silent and unproductive.

(1) MacMillan, R.G. - "The Changing Structure of Higher Education" Journal of Education Vol.2, No. 1. University of Natal, July 1970. (p. 9) (Note in brackets by the author of this thesis)

The universities, which are largely financed by the Central Government, also generally offer only limited opportunities for the local community to participate in courses or to make use of the costly equipment and rooms which are often available at various times of the year. Some universities do offer extension lecture series, cultural films, plays, concerts, art displays, winter schools, and so on, but when compared with the tremendous involvement of the community in many community colleges in the United States these efforts seem less impressive.

Surely the colleges of education and the universities could make a greater effort to include their communities and in so doing break down the isolation which often exists. The average citizen is often overawed by the qualifications and theoretical knowledge of many of the academic staff at a university and for this reason they do not become well acquainted with the programmes offered or with the people who teach them. This lack of communication is not conducive to a full and sensible use of the facilities a university can provide and often leads to an unbalanced view of the university.

If universities and other tertiary institutions could enter into more liaison not only with their local communities but also with industry and commerce then perhaps private enterprises would become more involved in trying to further the cause of tertiary education. When compared with overseas corporations such as the Carnegie Foundation and Ford Foundation in the United States the contributions made by industry and commerce to assist tertiary education in South Africa are negligible. A recent letter to the Cape Times by Prof. Feldberg Director of the Graduate School of Business at the University of Cape Town urged that substantial donations should be made by industry and commerce to help support tertiary education:

"Tangible public response to the needs of our universities is long overdue. Our private companies and alumni must begin to assume their proper rôle in the financing of higher education. If necessary South African taxation policy with regard to gifts and donations must be reviewed. Businessmen

must be shown the advantages of establishing foundations for the support of higher education." (1)

The main employers of the graduates who emerge each year are indeed industry and commerce and the question must inevitably be asked: How much have they put into the training and education of the very people who will soon be serving them in senior capacities and how much have they been consulted about the content of the professional and other courses? It is an established fact that CATEs use private enterprise on their subject committee boards where they are most useful in keeping the colleges acquainted with the present needs of industry and commerce but in many university departments this source of adjustment to reality and practical needs has not been utilised.

F. The Place of the Colleges of Education

As a result of the National Educational Policy Act No. 39 of 1967 which was amended in 1969 by Act No. 73, and the statement contained therein that the training of secondary teachers may be done at a university only, the colleges of education may become even more separated from the other tertiary institutions. As A.N. Boyce expressed it:

"One disquieting effect of the Act of 1967 is that colleges in South Africa may drift away and become isolated from institutions of higher education. I fear that if colleges do not stake a claim to a place in the system of higher education, they may be left stranded or becalmed in the backwaters of the academic world." (2)

One reason why the colleges of education are being left out of the mainstream of tertiary education is because they are monotechnic institutions being used exclusively for teacher training. However, the trend in many parts of the world is

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- (1) Letter written by Professor Meyer Feldberg to the Cape Times which was published on 15th January, 1973.
- (2) Boyce, A.N. - "What is the Future of Colleges of Education in South Africa?" Address to the Natal Teacher Education Association, Edgewood College of Education, 24th March, 1973. (p. 5)

towards the integration of all establishments of tertiary education into a comprehensive system as in West Germany where the comprehensive universities are called "Gesamthochschulen". This trend towards multi-purpose institutions of tertiary education has some significant implications for teacher education since many educators feel that all students should enjoy the experience of a university campus if possible and that colleges of education should not train teachers in isolation.

It would seem appropriate to refer briefly again (as was done in Section 3B of this Chapter) to the JACCTT structure for provincial co-ordination of teacher training. While it is true that the colleges of education are not directly represented on these bodies, they do nevertheless represent a mechanism which could be developed to permit co-ordination of university and college of education programmes as new needs arise, for example, in the preparation of junior secondary teachers needed for Phase 3 of the new differentiated education system for South African schools. The provision of JACCTTs could therefore represent a potential way of clarifying and entrenching the place of the colleges of education.

G. A South African Council for National Academic Awards

In order to bridge the "binary" gap which exists between the colleges of education and the CATEs (non-university institutions) and the universities, some body should be created to award credits to students doing degree-quality work in the non-university sector.

Support for such a step has been forthcoming from many educators, for example, A.J. van Zyl, Director of the Pretoria CATE, has stated that in order to attract students to CATEs the authorities should:

"Make it possible for a degree to be awarded for certain college courses.In the UK the CNAAs, and in Australia the Institute of Colleges has been established by law to award degrees. Why should the more 'practically' career-oriented course not justify a degree if its standard is high

enough?" (1)

A.N. Boyce, Rector of the Johannesburg College of Education, has also endorsed this concept in the following words:

"The functions of the CNAA are not to prescribe courses or impose any external assessment, but merely to recognise the quality of the courses of study as meriting an academic award. Perhaps the establishment of a similar body in South Africa would help colleges which are ambitious to raise academic standards. This certainly appears to be the only solution if the universities are unwilling and uninterested in extending their function by making their expertise available to the colleges." (2)

A former Director of Education in Natal, L.J.T. Biebuyck, has suggested in a recent report written for the Human Sciences Research Council that:

"A possibility is that the universities may form a body to act as a Council for National Academic Awards or as a Statutory Council for Professional and Academic Awards to moderate examination-papers and examine students. Students who passed the examination may then be awarded degrees by universities." (3)

In an article written in November 1972, C.M. Stimie has spoken strongly in favour of such a concept:

"Dit wil voorkom of iets soos die CNAA hier by ons nie onvanpas sou wees nie en of dit moontlik 'n belangrike bydrae sal kan lewer om aan tegniese opleiding anders as aan universiteite groter status te verleen en so meer kandidate te lok en te help om die tekorte wat ondervind word aan te

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- (1) Van Zyl, A.J. - Optimum Use of Manpower Pretoria CATE, 1971. (p. 341)
- (2) Boyce, A.N. - "What is the Future of Colleges of Education in South Africa?" Address to the Natal Teacher Education Association, Edgewood College of Education, 24th March, 1973.
- (3) Biebuyck, L.J.T. - Degrees by institutions other than universities - possibility and desirability Pretoria: HSRC, 1973. (p. 15) (Report No. 0-15)

vul. So 'n raad sou kon begin met die toekenning van sê maar 'B. Tech.'-grade wat deur nywerhede en handel as 'n volwaardige graad soos 'n driejaar B.A., B.Sc. of B.Com. aanvaar sal word, maar tog in benaming van universiteitsgrade sal verskil. Namate die Raad sy pad vind, kan hy naderhand selfs meer gevorderde grade toeken." (1)

Although the amount of university-equivalent work being done at CATEs and colleges of education at present is very limited it is reasonable to assume that it will increase in the future. Since it would take years of deliberation to create a South African CNAA it would possibly be wise to take the initial steps now in order to meet future demands which will inevitably arise.

The example set in the Australian state of Victoria seems appropriate here. Shortly after the Martin Report was published the Victoria Institute of Colleges was created. The main functions of the Institute are to promote the development and improvement of institutions of tertiary education, other than the University of Victoria, to distribute funds to the colleges of advanced education, and confer degrees, diplomas, and other awards to enrolled students of affiliated colleges who attain standards approved by the Institute. So far all but six of the nineteen colleges of advanced education have been affiliated by the Institute. It has therefore become the policy of the Victoria Government that the affiliated college system itself is henceforth to provide the opportunity for degree-level study for the growing proportion of the student body able to undertake it, while still preserving the opportunities traditionally offered for the achievement of a professional qualification by way of diploma courses. (2)

Would such an arrangement in some of the provinces in South Africa not solve the dilemma of the highly talented

(1) Stimie, C.M. - "Tegniese Opleiding in Suid-Afrika" Die Unie, Jaargang 69 Nr. 5. Kaapstad: November 1972. (p. 195)

(2) Partridge, P.H. - Society, Schools and Progress in Australia Oxford: Pergamon Press, 1968. (p. 160)

student at non-university colleges who is unable to gain any degree-credit from his studies no matter how meritorious?

Now that some universities, for example, the University of Natal and the University of Cape Town, are beginning to give increased recognition to work done outside their walls (cf. the special case of teacher training done by the CATEs for some universities and referred to in Section 2C (d) of this chapter), it would seem wise to extend such provisions. The establishment of a South African CNAA of some sort (possibly under the aegis of UNISA) would be a logical way of providing authoritative recognition for such work.

H. Common University and other Tertiary Education Dilemmas within the South African and World Context

(a) Integration or Independence?

A conflict evident in South Africa, as in many other countries, is that between the university as a self-contained entity and as leading member of an integrated system of institutions of tertiary education. Until comparatively recently, universities were to all appearances independent, self-contained institutions, academically free and having no duty to link themselves with other institutions of tertiary education. With the rise of an industrialised society, with science and its applications of basic importance to it, colleges for "the mechanic arts", technical colleges and colleges to prepare teachers to teach children the literacy and numeracy now indispensable, were needed in greater numbers. As the standards mounted the institutions to which the technologists, technicians and teachers went after leaving secondary schools became more obviously places of tertiary education. In South Africa some universities developed faculties of technology while in Germany and Holland, for example, separate technological universities were created. But it is only in very recent years that it has become clear that technicians and primary school teachers need a period of higher (as distinct from further) education: one which introduces them to the principles as well as the intelligent practice of a craft. The dividing line between the

technological and the technical expert has become harder to draw; that between top management and middle management less precise; that between the essential demands made upon the teacher in a primary school, staffed mainly by non-graduates, and those made upon the teacher in a secondary school, staffed chiefly by graduates, less easy to differentiate.

It does not follow, of course, that if institutions of further education are upgraded, they should necessarily develop closer links or relationships with universities. However, there are many reasons why there exists a world-wide tendency for them to do so and these reasons apply equally in South Africa. First, there is in most countries, and especially in South Africa where great social stratification exists, a strong movement towards greater social equality. In a period when men "knew their station" there was less upward and downward mobility than there is ever likely to be again. Second, we are far more aware too, than we were, even up to a few years ago, that the abilities of man are not safely to be categorised in childhood or youth as gold, silver, iron and copper. It is not merely that mistakes can be made in categorisation but that what is known as ability depends so much on assumptions about what ability itself consists of, on capacity to recognise its presence, on the self-estimate of its possessor. So that without denying at all differences in innate intellectual potential between individuals we are more and more sure that flexibility of organisation in an educational system is important. Third, ease of transition for students between different types of educational institution at the tertiary stage is likely to become more possible - whether within the same institutions, which will then become a "comprehensive" university, or between institutions retaining their separateness. Fourth, it is also becoming obvious that the duplication of very expensive research facilities, staff, and even library resources, in inviolably separate though neighbouring institutions can be a waste of money and in future there may well be more natural migration, by the staff of one tertiary institution to another, than there is at present.

Something of the strength of the current movement in West Germany towards the comprehensive university has been discussed in Chapter Five. One of the motivations of this movement is the conviction that here is a pattern of higher education which will save waste of talent and of spirit. In the Danish concept of comprehensive Centres of Higher Education, mentioned in Chapter Two, the idea is that every Centre should specialise in a few related subjects, some of them less academic, others more so. Transference in each direction between less and more academic types of study would be easily possible, exemptions being given for courses already passed. It would seem wise that South African educationists should take cognisance of these developments as a possible solution to the dilemmas facing their institutions of tertiary education.

A more common development in tertiary education in many countries, and also in South Africa, is the extension of already existing technical and further education systems to cater for much larger numbers of students, of whom an increasing proportion are full-time. A development of this kind entrenches the twofold pattern of university and non-university institutions and temporarily leaves unsolved the problem of transfer from university to polytechnic or vice versa in Britain; from university to CAATs or vice versa in Ontario; from university to IUT or vice versa in France and from university to CATE or vice versa in South Africa. Such a transfer gap leaves many questions unanswered - the longer-term future is quite inadequately faced by such a pattern, however satisfactorily the more immediate demand for larger numbers of technicians may be met.

Any organisation of tertiary education into a system which makes the university - as the leading member of the institutions of tertiary education of its region - into a kind of centre for educating society, assumes that it will have developed an understanding of what such a function entails; and that is far from being the case at present. Rapid evolution towards such an awareness of responsibility is not likely to be possible, but it is difficult to see

what in the long run is a satisfactory, or even viable, alternative to it.

During the next decade many more students in tertiary education in South Africa and many other countries will probably be studying part-time; and a larger proportion will be older men and women returning to update their qualifications or renew their intellectual vitality. These factors by themselves could greatly change the image a university has of its own nature and add to its capacity for developing links easily with other parts of the tertiary education system. The concept of the Open University in England and that of open admissions, as at the City University of New York, are experiments which merit attention, not only because of their boldness but because of their broadening of the concept of what a university can properly be.

(b) Specialisation or General Education?

Traditionally, the university was the only institution of higher education - attendance often bestowing social prestige and leading to membership of a profession itself in a position of authority, for example, the church, medicine, law, and the civil service. It was, of course, assumed that people would emerge from their university generally educated and this was more likely before man had entered as technical an age as ours.

However, today a dilemma faces the university - should they produce specialists or more widely educated people. At present the demand is that universities should produce the specialists indispensable to a technologically complex society since lack of the necessary surgical, chemical or economic knowledge may spell disaster. And the more complicated our world becomes, the narrower the specialisms may need to be. The pressure to produce adequate numbers of specialists is so great in every industrialised country that if universities will not do the job, other institutions of tertiary education must rapidly be found that will.

In the United States and in a number of countries influenced by the American tradition, the first two under-

graduate years have included the study of a variety of subjects chosen by the student himself thus giving a place to general education. In Europe the dangers of over-specialisation once the university has been entered have been real, while in England the problems of narrowness arising from upper-level school concentration on a group of three sciences or three arts subjects, has been even greater. South African universities have been inclined to follow the European pattern and many degree programmes contain virtually no general education courses.

Significant attempts have been made in many countries to widen the scope of first degree courses, especially in the first year or two. The University of Keele in England went so far as introducing a Foundation Year which required all undergraduates to study for their first year a combination of some science and some arts subjects. All nine of the non-technological universities founded in the United Kingdom since 1960 have degree programmes designed to prevent too restricted an approach to a single subject field, and the tendency in many longer established universities in many countries has been to broaden rather than confine their requirements for a first degree. One solution has been to work out syllabuses for degrees which are interdisciplinary in concept, involving an interrelated study of two or three subjects right up to the first degree examination. There is also a natural growth of interdisciplinary fields at the postgraduate level but such a recipe will, however, still only be very partially a solution to the problem of reconciling specialised with general education.

(c) Research or Teaching?

The concept of the university as a producer of research and knowledge - and the concept of the university as an institution charged primarily with civilising and humanising its members - presents yet another dichotomy leading to conflict. Quite clearly research fertilises teaching, few will argue with this viewpoint. But how much research is necessary for the purpose?

Those pursuing laboratory research or even research in social science fields have of necessity to detach themselves from the world. This detachment, necessary though it is, can so easily breed a remoteness from human concerns. Should then universities come closer to the market place? Niblett has provided an answer to that question in a recent publication (1):

"What may be needed is more anxiety to get right inside the human condition, more sensitivity, a greater capacity to be imaginatively and morally aware. This too will involve discrimination and critical judgement; rationality and discipline of mind; a refusal to give way to sentimentality and illusion. But detachment will alternate with identification and both be legitimised as activities proper in universities."

(d) National Interest or Academic Freedom?

There are parts of the world as different as California and China where the state has demanded, not without success, that universities should toe lines, which left to themselves they might well have been unwilling to do. In almost every country sanctions have been used to bring to heel institutions of higher education thought by the state to be serving it in particular respects inadequately, ineptly or selfishly. Here then arises yet another dilemma for the university - that of looking upon itself as an autonomous institution, pursuing its own way in freedom, unhampered by the state - or as having duties laid upon it from the outside so that it furthers national policy and national prosperity.

Which of the state's own needs is it legitimate for it to require universities to satisfy? If it wants to reduce the number of surgeons to be trained and add to the number of civil engineers, this may be acceptable - provided that the institutions of higher education are given enough time to make the change. But if it demands a wholesale switch

(1) Niblett, W.R. - "Issues and Choices" Article published in The World Year Book of Education 1972/73 (Edited by Niblett, W.R. and Butts, R.F.) London: Evans Brothers Ltd., 1972. (p. 4)

from arts to technology are the universities to have little say in the matter? Has not the university a responsibility for providing not only experts in particular fields, but overall critics - including critics of the state itself, its assumptions and even its policies?

Who shall decide what type of citizens the universities must produce? Who will decide whether a great need for the future may not be for more people with an international outlook, which may cause them to challenge merely national interests? The universities on occasion may easily seem to be producers of a mixture of protesters and rebels and their public image may suffer accordingly. Have they to conform or defend themselves? Do universities have a responsibility for interpreting the needs of their country, to those in political office, and to the public in general?

These issues are becoming more urgent as extra-national contacts grow more frequent and fuller realisation is gained of how valuable the contribution of the universities can be in the solving of problems of health and technology and for clarifying aims in national and personal life.

No institutions of higher education anywhere have ever really been such free agents as they may have thought they were. In future they are likely to become more and more dependent upon the public purse for funds either directly or indirectly. Their way forward cannot therefore be one of seeking to isolate themselves either from the public or the state. As W.R. Niblett summed it up:

"Their importance as centres of research, of new knowledge and new applications of knowledge is not in question. But their public relations work is, in many countries, in need of improvement: what Dr. Weidner calls their 'community outreach' could be furthered far more imaginatively than has often as yet been attempted. Yet to develop chiefly on this side could result in an enfeeblement of their capacity to be detached while remaining informedly humane-intellectual

consciences of their country....." (1)

In future universities are less and less likely to cater chiefly for a wealthy elite whose views are accepted in a community by reason of their assumed social distinction. Yet it was an acceptance of this kind of superiority which has given universities in the past much influence - largely through their graduates who occupied so many of the major positions of power. The elitism of a social class is no longer necessary but graduates must rather possess an elite integrity of mind and be able to make sound and intellectually good judgements. What is in the last resort an aristocratic ideal, that of academic autonomy or freedom, must find a place within the minds of as many as possible of the people universities educate, so that they have an ability to be detached, possess values to which they are committed, and have the ability to give reasons for holding them important.

I. Some Basic Issues

As has happened in many other countries certain fundamental questions must be asked in South Africa:

- (i) Should universities be the sole awarders of degrees?
- (ii) Is it correct to assume that a programme of study which is more critical, contemplative and abstract is necessarily superior to a programme which contains a carefully established balance between the critical and the applied arts or sciences?
- (iii) Should a student who did not possess the required qualification for entrance to a university be penalised at a later stage when he has proved his ability to be equal to that of qualified students? And should that student then be required to retrace his footsteps to gain the original entrance qualification when his competence at an advanced level has already been proved?

(1) Niblett, W.R. - "Issues and Choices" Article published in The World Year Book of Education 1972/73 (Edited by Niblett, W.R. and Butts, R.F.) London: Evans Brothers Ltd., 1972. (p. 11)

The United Kingdom has answered the first two questions with its CNAAs which maintain academic standards equivalent to those required by universities and yet function entirely separately from these institutions by awarding degrees to selected students and programmes in polytechnics, technical colleges or colleges of further education which are oriented either towards the traditional humanities or towards many applied arts and sciences which are not found at British universities.

The third question has been resolved in the United States by the open door policy of many community colleges and even by the prestigious City University of New York which has recently allowed open enrolments in all its constituent undergraduate colleges. A classic example of open enrolments has also recently been widely publicised in the form of the new Open University in England where the only entrance requirement is that students must be 21 years old. When a conservative, highly respected system of tertiary education such as that in England allows open enrolments and does not require any formal entrance qualification then it could well be time for the Joint Matriculation Board in South Africa to show greater flexibility in their entrance requirements.

4. ADAPTATIONS OF SHORT-CYCLE TERTIARY EDUCATION CONCEPTS

A. Clarification of Intent

The object underlying this section is to try to use the results of this comparative study in a constructive way and to envisage adaptations best suited to local social and economic conditions. In so doing there is a firm intent of reform since comparative education has a utilitarian purpose.

The proposals which follow have tried to take cognisance of the situation which is, in many instances, rather different from that prevailing in the United States - the source of most of the adapted concepts.

The object of this brief attempt at adaptation is to stir people into new ways of thinking and to provide a stimulus for action and re-shaping of ideas. The proposals

are not radical or complex but simply practical, down to earth appeals for a fresh examination of many parts of the tertiary structure of education in South Africa and to make educators in this country aware of prevailing trends which they dare not ignore.

These adaptations have been undertaken with the awareness that it is irresponsible to indulge in utopias since they end up, as history repeatedly reminds us, on the reformers "junk heap". The adaptations of institutions to society, like the adaptations of organisms to the environment, can take place only one step at a time, from something which functions already to something which functions a little better. They have also been proposed with the awareness that it is futile to propose remedies and solutions which are not politically viable.

No detailed proposals have been attempted since this would entail a major study in itself. The main outlines have been held up for inspection with the hope that these concepts may provide a framework upon which to construct a detailed pattern.

Quite clearly many ideas have emerged from this thesis which might lend themselves to adaptation to South Africa. However, only a limited number have been considered in this section mainly because, at this juncture, they seem more likely to transfer fairly easily into our system. Also because such ideas would permit the general evolution of tertiary education in South Africa in conformity with developing world trends which reflect the more equitable provision of tertiary education opportunities for a greater proportion of the population in terms of intellectual capacity and manpower requirements. Each of these brief proposals has been made with an awareness of the prevailing conservatism among many South African academics and for this reason the broad principles only have been stated in order that each institution or group of institutions may themselves ponder the value of these ideas and their possible adaptation to their own particular environment.

B. Community Services

(a) Introduction

Although most universities in South Africa make some effort to encourage community interest and involvement the relative amount of time and money expended on these efforts is negligible (considered proportionally to the respective sizes and economies of the two countries) when compared with institutions which perform similar functions in the United States.

By their very nature the CATEs in South Africa do concern themselves considerably with services which offer the man in the street an opportunity of studying a large number of subjects for various certificates and diplomas and attending a wide range of short courses based mainly on recreational or creative activities. However, even the CATEs cannot compare with the provision of community services at most community colleges of equivalent size in the United States.

As already stated, the colleges of education have little or no involvement in community services and it would seem clear that a valuable and needed service to the community is being neglected by these institutions. Their expertise and fine equipment and facilities are being utilised only to a limited extent and a vast potential resource of public enlightenment is not being used to full advantage.

A rapidly developing country simply cannot afford to have citizens who are not trained to increasingly higher stages of competence, and as the industrial outputs increase the need for a larger force of skilled workers will become more evident. As racial barriers fall and the non-white peoples become more absorbed into sophisticated levels of work, the need for facilities to train these people will grow and every single means available will have to be used to the full.

Not only will workers need to be re-trained and become a part of the quickly developing concept of recurrent education but the advent of more leisure time for most people also brings the need for ways of teaching people how to use

their leisure time constructively. And this is why the community services offered by all types of tertiary education institutions will assume more importance each year.

Empty lecture rooms; equipment standing unused; some highly-trained university teachers enjoying long vacations without using them constructively; these facts are not conducive to an effective implementation of needed community services. It would seem quite obvious that university and college of education campuses should not be allowed to stand empty during the long vacation months but that programmes of re-training in a wide variety of jobs, and courses needed and sought by the community, should be provided under careful supervision so that valuable equipment is not abused.

(b) Problems of Implementation in South Africa

Since the universities, colleges of education and the CATEs are funded primarily by Central Government and provincial sources it is clear that the community does not feel any great responsibility for these institutions and is therefore not involved and concerned. However, in the United States the citizens of many towns or cities have been directly responsible for the creation of their local community college and often of their local university or four-year college. Their great concern and involvement with these institutions is therefore easy to understand and with this concern comes naturally a demand for an extremely well developed set of community services.

In South Africa, as in many other countries where postal services, transportation, and so on, are frequently State controlled, the tendency has been for the State to centralise the whole educational system and all public services. Certain societies, of which South Africa is one, have also nationalised key industries, particularly those associated with primary industry or where lack of private capital might have delayed or restricted development. However, this centralisation tendency brings with it an inevitable capitulation of local interest and a willingness to rely on the central authorities for things which often would be better

implemented and quicker to develop if dependent on local initiative and strategy.

Herein lies the dilemma of the lack of community services - the authorities in charge of universities, although having a considerable amount of autonomy in internal matters, have not really sufficient resources available to create large and well staffed departments of community services. (1) Added to this is the conservatism of many senior university academics and administrators and their desire to preserve the "ivory tower" traditions which have too long separated the universities from their communities. The senior officials at colleges of education are of course subservient to their provincial departments of education and are not able to make decisions relating to the creation of a community services department. They are also subject to strict budgetary control and it would appear as if the provincial authorities at present have neither the money nor the inclination to extend such services to the public.

There would appear to be an awakening interest in the universities to create more opportunities for community services. Evidence in support of this statement is provided by the recent Universities Seminar on Adult Education (September 1973) at which all the universities of Southern Africa were represented. It was appropriate that the University of Cape Town should have been the host for this seminar since it has for many years been offering the most extensive programme of adult education in South Africa by means of evening classes and residential schools organised by their Department of Extra-Mural Studies. Although this seminar did reveal the great lack of community services or extra-mural studies at South African universities it also augurs well for the future that such a gathering was organised to stimulate thinking in this direction.

(1) Attempts have been made to consolidate such concepts in some of our universities. For example, the University of Natal recently decided to appoint a full-time person to the newly created post of Organiser of University Extension Programmes under the wing of the Academic Planner who has been organising such activities during the last few years.

(c) Points to Consider

Community services courses do normally reflect the socio-economic structure of the society in which they exist. For this reason these courses are the most provincial of all courses. It is therefore recommended that each university and college of education in South Africa should carefully consider its own local needs in the establishment of courses to serve their immediate area. By so doing it can help to break down social and university or college barriers and bring itself more into the community. South African colleges and universities must take cognisance of the world-wide trend towards the breakdown of academic elitism and they must destroy any alienation from their local communities which may exist. No institution of tertiary education has the right to offer its huge resources to only a select, limited, privileged group of students to the exclusion of the very people who made the creation of the institution possible by means of their taxes. However, it must be conceded that the elite, academic group who do have almost exclusive use of the universities are working at a level of research which is beyond the attainment of most people. As indicated at the end of Section 2 of this chapter, this point clearly calls for some form of differentiation between post-secondary or tertiary education (some of which is more for the masses) and a higher level which might be called quaternary education or upper-division (third year onwards) university study.

The community should feel free (since the colleges and universities belong to them) to utilise the special skills and knowledge of the staffs of these institutions. The community, including business and industry, often needs the leadership and co-ordination capabilities of the colleges and universities to assist in long-range planning and to join with individuals and groups in attacking unsolved problems such as air and water pollution. The colleges and universities are under a definite obligation to contribute to, and promote the cultural, intellectual, and social life of the area in which they are situated and also the development of skills for the profitable use of leisure time.

One lesson which South African universities and colleges should learn from their counterparts in the United States is a greater degree of commitment to the provision of part-time degree credit facilities to students. It is true that UNISA provides considerable correspondence opportunities to any matriculated student of any racial group. However, many part-time students prefer the face-to-face lecture situation where they can also confer regularly with their tutors or lecturers. Correspondence degrees have their limitation especially when it comes to laboratory work and practical experiences, and few part-time students can utilise fully the vacation courses on the campus of UNISA in Pretoria. (1)

While it is true that all white South African universities do offer part-time late afternoon and evening courses, an examination of these provisions soon reveals that only some programmes are offered (and sporadically or during alternative years) and that programmes entailing full laboratory use are very seldom provided.

This contrasts quite strikingly with the United States where, almost without exception, public institutions at tertiary level offer the part-time student a vast range of programmes (often the day courses are repeated in the evening) including full use of laboratories either in the evening or on a Saturday. Admittedly the large population in the United States does make this sort of community service a more viable economic proposition. However, many South African universities and colleges could undoubtedly provide more adequate part-time programmes even if extra staff had to be employed for this work.

(1) It should be noted that UNISA has now started (in a very limited way) to bring tutors to students on a regional basis. So far three regional offices have been opened at Cape Town, Windhoek and Durban and visiting professors and lecturers conduct group discussions with students in those areas and often help students individually as well. These regional offices also house small libraries (about 3,000 books) to aid students. This also happens at the Open University in England where tutors in residential universities frequently undertake responsibility for this work.

Yet another lesson to be learned from the community colleges and other tertiary institutions in the United States is that of the provision of "summer sessions". These periods of six to eight weeks are provided during the long summer vacation at large numbers of public (and often private) institutions in the United States. At these "summer sessions" students may concentrate on one or more subjects and gain full academic credit for the courses they successfully complete. In this way the industrious student can shorten his total length of time spent in studying and it means that the institution is made full use of throughout the year.

South African students have never been provided with such a community service and it is therefore recommended that a suitably adapted version of the American "summer session" be considered during our long summer vacation. In this way the zealous student could shorten his course considerably over a period of three to four years.

(d) Summary

By its very nature the American Community College has always contained elements in its basic conceptions which represent the antithesis of educational elitism. The very nature of the community college philosophy includes a commitment to every citizen to expand post-high school educational opportunities to persons at all socio-economic levels and to all segments of the population.

By their very nature, and because of the ideological and political restraints from the Central Government, universities and colleges of education in South Africa are more selective (1) than American Community Colleges and have not the same commitment to the community. They have not been able to fill the educational vacuums in their communities partly because of financial limitations and partly because of their conservatism. Unlike many institutions in the United

(1) The colleges of education are more selective, not in the academic sense, but because they offer only one service, namely, the training of teachers.

States they have not been able to get to the crucial sources of social ills and educational voids partly because they are not equipped to do so and partly because the authorities controlling them have not seen fit to channel them in that direction as yet.

South Africa cannot afford to ignore the fine work being done in community services departments in universities and colleges throughout the United States. By reducing the academic exclusiveness which often prevails and by enlisting the full support of their local community, South African institutions will be able to increase their provision of community services and they will benefit accordingly.

The presence of a correspondence university such as UNISA, which offers a wide variety of programmes and courses, has inevitably been responsible for inhibiting the development of extra-mural community services (especially part-time or evening degree study) in the residential universities in South Africa. When students or the press have been critical of the lack of adequate part-time facilities in some universities the author has often heard academic teaching staff reply nonchalantly: Why should we have the trouble and bother of teaching in the evening since the students can always get what they want from UNISA?

C. Audio-Tutorial Teaching

Audio-tutorial teaching combines the essential elements of a systems approach and programmed instruction (1) and it is being experimented with on a large scale throughout the community colleges of the United States (and in other institutions).

Postlethwait's development of this concept at Purdue University greatly influenced its use and adaptation by Oakland Community College in Michigan in the early 1960s and more

(1) The question could well be asked whether this concept is, in fact, not really "programmed education" as opposed to "programmed learning". It is also interesting to consider whether UNISA is not moving, albeit slowly, in this direction.

recently at Golden West Junior College in California and many other community colleges. Although the audio-tutorial approach has been mainly used to teach botany it has also been successfully applied to other subjects.

Programmed instruction of various sorts has been known and used in South Africa for a number of years but is at present not being utilised a great deal, in fact, it has declined in popularity. However, as far as is known, the audio-tutorial type of programmed instruction has not been attempted in this country and the fact that it has been so successfully implemented in many institutions in the United States could indicate that it may have some instrumental value in South Africa (but not necessarily so).

It is therefore recommended that this concept be carefully examined with a view to attempting its application in South Africa. The fact that the audio-tutorial approach uses a team teaching method for its "general assembly session" and its "small assembly session" could be of interest and value to South African teachers at tertiary level since team teaching has not really been used a great deal and is another concept which deserves careful attention. Add to this fact the convenience of the "individual study sessions" which allow a student to come to the laboratory at his convenience any time during the week (day or night) and it is clear that here is an acknowledgement of the importance of learning at a pace which the individual can follow. Since "individual study sessions" are perhaps the heart of audio-tutorial learning it is interesting to note here the endorsement of the "individualised instruction" school of thought which has its counterpart in the elementary and secondary non-graded schools in many parts of the United States.

D. Co-operative Work Study or Sandwich Programmes

(a) Introduction

The concept of sandwich courses or co-operative work study only began in South Africa in the late 1950s (Pretoria CATE in 1957 and Natal CATE in 1959) whereas in the United States this type of programme had started at the University

of Cincinnati as early as 1906.

From the extra fifty years of experience in the United States certain lessons can be learned and it is to be expected that older, more established co-operative work study programmes in different states should be able to function more smoothly than the relatively new developments in this field in South Africa.

At present the CATE sandwich programmes are concentrated mainly in the engineering field and lead to the award of the National Diploma for Technicians (in the relevant branch of engineering). In contrast to this narrow range of programmes, co-operative education in the United States offers a wide range of programmes at all levels of tertiary education and in virtually all professional fields of specialisation: engineering and technology, business administration, education, arts and sciences, law, physical therapy, pharmacy, nursing, medical technology, architecture, advertising design, industrial design, home economics, community planning, and so on. The scope of co-operative education also extends to post-graduate programmes in various professional fields in at least six institutions in the United States.

(b) Adaptation of Ideas

(i) Broader Spread

In adapting American ideas on sandwich programmes to South Africa it would seem clear that the first possible recommendation would be a careful consideration in the younger system of the possibility of broadening the application of this concept to new programmes in order to perpetuate and extend the success which engineering sandwich programmes have achieved.

If the idea of co-operative education is to provide more opportunity for students to gain an understanding of the world of work and to integrate traditional study and practical experience, then surely these desirable objectives could be successfully adapted and used in many other CATE programmes.

If sandwich programmes can be successful in engineering fields where employers have been gradually introduced to this concept there would appear to be no reason why employers in a wide selection of professions should not be "educated" into an acceptance of such work study programmes. There is no problem of transfer involved here since the milieu of the business world in the United States is not so different from that in South Africa. Quite clearly the profit motive is the main driving force in both countries and if employers can be shown that their businesses will benefit by having sandwich programme students working for them then there should be no reason why greater experimentation is not feasible. Employers in South Africa, as in the United States, will soon realise how important it is to be able to play a part in training their potential future employees not only because they then have an opportunity to see these students in action but also because these students should be better motivated than most people since their programmes bring reality and relevancy to their education.

(ii) Two-Man Teams

A typical sandwich course at the CATEs is one in which the trainees attend the CATE full-time for six periods of 12 weeks each, spread over four years and receive their practical training in industry during the remainder of each year. (1) Industry-based trainees are employees of a particular firm or organisation which is responsible for their salary and practical training. The trainee is instructed, each year, to attend the college part of the sandwich course, and is paid by his firm during the period of college attendance.

It is clear from this pattern of training that firms simply have to "make do" without their sandwich programme

(1) This particular example is taken from the 1973 Handbook of the Natal CATE and is found in the section headed Sandwich Courses for Engineering Technicians p. 13. It closely resembles requirements for this sort of programme at the other CATEs.

students while they are attending one of their 12 week sessions at a CATE. However, in the United States most co-operative education programmes are organised on a "two-man team" or "pair of students" basis. The initiative, unlike the programme outlined at the Natal CATE above, generally remains with the co-operative institution in the United States. In that country a full-time job is obtained by the co-operative institution in an industrial concern or some other type of organisation. This job is usually shared by a "two-man team" on an alternating basis (while one student is working on the job, his partner is attending lectures). At the end of a specified period the students change places. This permits the co-operative assignment to be covered throughout the year by a pair of students.

A second recommendation would therefore be that organisers of the CATE sandwich programmes in South Africa should consider the "two-man team" pattern as an alternative to their present organisation. Employers would surely find it to their advantage to have a student available throughout the year to perform a job while the other one is busy with his college training.

(iii) Concurrent or Parallel Work Study

In South Africa the sandwich programme student is either busy at his place of employment doing practical training or he is studying at a CATE for a concentrated period. While it is true that this type of alternation pattern means that students do not have to serve two masters (work and study) at the same time, a second pattern of work experience education in the United States allows for a student's work experience to be concurrent or parallel with enrolment in a lecture course. Normally, the student will spend one half-day attending lectures and the other half-day in the working situation. The hours of work may be planned for morning, afternoon or evening and may vary from 15 to 40 hours per week. The lecture load would vary accordingly.

A third recommendation is that CATEs in this country seriously consider the possibility of allowing some students

to pursue such concurrent or parallel sandwich programmes. The advantage of the half-time arrangement is that the employer may continuously cover one full-time job with two half-time students. From the student point of view they can enjoy an uninterrupted programme of study while they maintain their academic, social, and student body relationships and the information gained in class and at work can be immediately interrelated and mutually supportive.

(iv) Foundation Year

In the South African pattern students start their alternating periods of work and study from the outset and they have little opportunity of establishing a real relationship with the CATE lecturers since the study periods of 12 weeks are comparatively short.

In many co-operative institutions in the United States where a bachelor's degree may be obtained the work study programme is operated over a five year plan. The first year is devoted to full-time study which provides the staff co-ordinators enough time to assess the students' academic ability and also provides time for an effective orientation course as well as preliminary screening of the students' interests, needs, and qualifications for co-operative placement.

A fourth recommendation is that the CATEs in South Africa consider the establishment of a foundation year in sandwich programmes which they might start in the future. Such a foundation year may not be necessary or wise in the engineering fields where sandwich programmes have been running successfully without them for some years. However, if the first recommendation to broaden the number of sandwich programmes, comes about, then the foundation year may well be useful in fields other than engineering. The advisability of establishing a foundation year could well depend on the extent to which the first three recommendations in this section are implemented.

E. TV College Concept

Since the start of a television service to certain parts of South Africa is scheduled to take place early in 1976 it is appropriate to consider what use can be made of the successful educational television programmes which have been offered for some years in many countries.

Chicago TV College is one of the most successful television teaching experiments ever conducted and has proved its efficacy over a period of nearly twenty years. Despite the fact that our television service will be very different from that offered by a number of independent private stations in the Chicago area (since our service will be Government-sponsored and controlled), it is nonetheless clear that South Africa can learn much of value from the experiences of Chicago TV College. It would therefore be of great value to this country if a number of trained technicians and academics with an interest in this field were to be sent during the next two years to make a detailed study of this College and to gather valuable data for use in our television teaching attempts of the future. (1)

The use of cable television will also have to be carefully considered and South Africa must be in the almost unique position of being able to start afresh with her television service and make use of all the valuable experience gained throughout the world. The Communiversities in Orange County, California, the programmes offered by Miami-Dade Junior College in Florida, the Open University in England, the Bavarian Telekolleg and numerous other developments in the field of television, offer South Africa unlimited opportunities of studying the educational significance of these experiments. An eclectic approach would clearly seem the wisest while bearing in mind the social and other factors influencing and

(1) The value of such experience is borne out by the visit of Norman Watson, chancellor of the Coast Community College District in California, who spent three months in England at the Open University planning and observing in order to implement these ideas in the Coast Communiversities (described fully in Chapter Four of this thesis).

determining our own proposed service.

The valuable correspondence study opportunities provided by UNISA could so easily be combined with the new South African television service (since both would be Government-sponsored) to create an Open University in this country. Such a concept could compensate somewhat for the-distance-from-the-source problem and would bring the lecturer and his personality into the homes of many students.

The possibility of our own Open University is exciting since it would provide an opportunity for many people who had not seriously considered further study and could stimulate the interest of the vast number of intelligent people of all races who have never really been challenged or made use of their ability. The problem of entrance requirements would inevitably arise and the JMB would have to resolve this issue and decide whether greater flexibility (1) or a selective approach would benefit the country the most.

Closed circuit television has been used, to a very limited extent, in many of the institutions in all three sectors of tertiary education in South Africa. However, it would be accurate to describe its use as being at a tentative, experimental stage since most institutions are not willing to commit themselves to the vast costs involved in any large scale use of this type of television. The recent advent of video tapes (and now video cassettes) is beginning to have an impact on the educational scene in this country but this phenomenon is even more limited at present than closed circuit television.

Once television has been launched in South Africa the large scale manufacturers of receiving sets will obviously turn their attention to video tapes since they are closely linked with the concept of both open and closed circuit television. Once again this country can benefit from

(1) In the Open University in England the only entrance requirement is that a student must be 21 years old. A recent exception has been the enrolling of 500 matriculated students who were only 18 years old.

experiments in both these fields in Europe, Japan and the United States although the educational significance of these developments has not yet become clear even in countries where they have been used for some years. In this instance great caution should be exercised by educators in South Africa although, as previously recommended, visits to institutions successfully using such equipment can only benefit our country. It is significant that an ever-increasing stream of South African educators visit Europe and the United States each year in order to gain experience in all kinds of technological developments including television.

F. Accreditation

(a) Introduction

The only known experiment in accreditation in South Africa occurred between 1966 and 1971 in the Transvaal at senior high school level and was known as the Matriculation Project. This project was conducted by the Transvaal Education Department with the sanction of the JMB which is wholly responsible for certification of candidates for the matriculation examination of the universities and the laying down of exemption provisions.

At tertiary level there is no body such as the CEEB based in New York in the United States and offering its CLEP to people in many parts of that country. While it is true that the existence in South Africa of the JMB does help to maintain a basic "standard" of entrance to universities, it is also true that as our tertiary education system becomes more complex and diversified, provision will probably have to be made for alternative entrance requirements to the three main sectors of tertiary education.

The implementation of the newly proclaimed differentiated system of primary and secondary schooling in South Africa, which is currently taking place, has inevitably meant that the JMB has been forced to become more flexible in its laying down of matriculation requirements. However, as Professor R.G. MacMillan has remarked: "There is little doubt that there is need for considerable revision of the 'matriculation'

structure, especially when it is considered that the general pattern of matriculation in South Africa has not changed a great deal over the last ninety years." (1)

While conceding that the JMB has succeeded in establishing academic standards of university entrance and that it has served as a much needed liaison between the universities and the high schools, the question must inevitably be asked whether this body will in future be able to cope with the surge of student numbers which can be expected to increase annually. Another problem which will one day face the JMB, is the great increase in non-traditional study which has occurred in the United States, the United Kingdom and other countries, and the fact that alternative routes to tertiary education are being sought and demanded by society.

(b) Non-traditional Study

The only way that other countries have been able to meet the demand for these alternative routes to recognised degree programmes has been by providing such opportunities as CLEP in the United States or the various forms of external degree programmes described in Chapter Four. The most significant recent form of non-traditional study has been provided by the Open University in England which has clearly been influenced by institutions such as Chicago TV College and the Bavarian Telekolleg.

As the inexorable move towards mass tertiary education takes place in South Africa changes will have to be made and serious consideration given to the awarding of degree credit for theoretical knowledge gained outside the traditional lecture-room situation. The opportunities provided by UNISA for correspondence study have partially answered this problem but once again entrance to this institution is controlled by the JMB and the question of genuine alternative routes has not been resolved.

In the community colleges and other tertiary institutions of the United States more and more mature students (over

(1) Behr, A.L. and MacMillan, R.G. - Education in South Africa (Second Edition) Pretoria: Van Schaik, 1971. (p. 194)

23 years) will be studying in their homes via television or other media and it is important for the adult student that institutions assign credit for whatever they have learned by whatever informal means.

South Africa will have to take cognisance of these developments and consider the creation of academically sound programmes (such as CLEP) offered on a national scale whereby students can gain credit for degree-level work without reference to the previous academic record of the student. There would appear to be no legitimate reason for some students in this country being penalised because they have not matriculated, especially when they have achieved levels of competence which are equivalent to, or more advanced than the matriculation examination. Some cases exist in South Africa where a mature student (23 years or more) has been granted a conditional exemption by the JMB and has been allowed to proceed with degree studies. Then when these students have passed their degree programmes in full the degree has not been recognised or awarded because the original conditions of the conditional exemption have not been complied with within the specified time. This is indeed a case of "putting back the clock" and forcing a student to revert to his former position which he has long outgrown.

While the South African academic community is generally too conservative to even entertain the thought of a "University Without Walls" as created by Samuel Baskin, or the Empire State College as conceived by the State University of New York, it is nonetheless sobering when even the British produce an Open University which does not require formal entrance qualifications. Perhaps it is wise for a younger, less-diverse and less-affluent society such as that in South Africa, to observe these experiments from afar especially since they have not yet proved their worth beyond any doubt. However, South Africa cannot afford to sit too long on the side-lines when it is all too obvious that these same issues will soon have to be solved in this country.

G. Articulation and Flexibility of Access

(a) Introduction

The community colleges of the United States have succeeded in most instances in establishing lines of communication in order to promote articulation with senior colleges and universities both in their area and often throughout their state and even further afield.

The Associate in Arts degree has become an acceptable transfer unit from community colleges to senior institutions in the majority of states and although various senior institutions allow different amounts of credit to these transfer students, nevertheless this qualification is gradually becoming entrenched as a valid means of transfer.

South Africa has no such qualification and no such articulation between the CATEs and colleges of education, and the universities, although in some universities very minor concessions are granted to students from the "lesser" institutions.

Quite clearly no possibility exists at present for the creation of a new system of community colleges in South Africa - partly because of the fact that the number of school-leavers (and indeed the total population) is not sufficient to make such a system viable, and partly because of the fact that nine CATEs already exist which, in essence, are not unlike the community colleges. However, there is more likelihood that an intermediate qualification based on a blending of the best elements in the concepts underlying the new Dip HE in England and the Associate in Arts degree in the United States, could one day become feasible in South Africa especially if such a qualification did not necessitate the creation of new institutions.

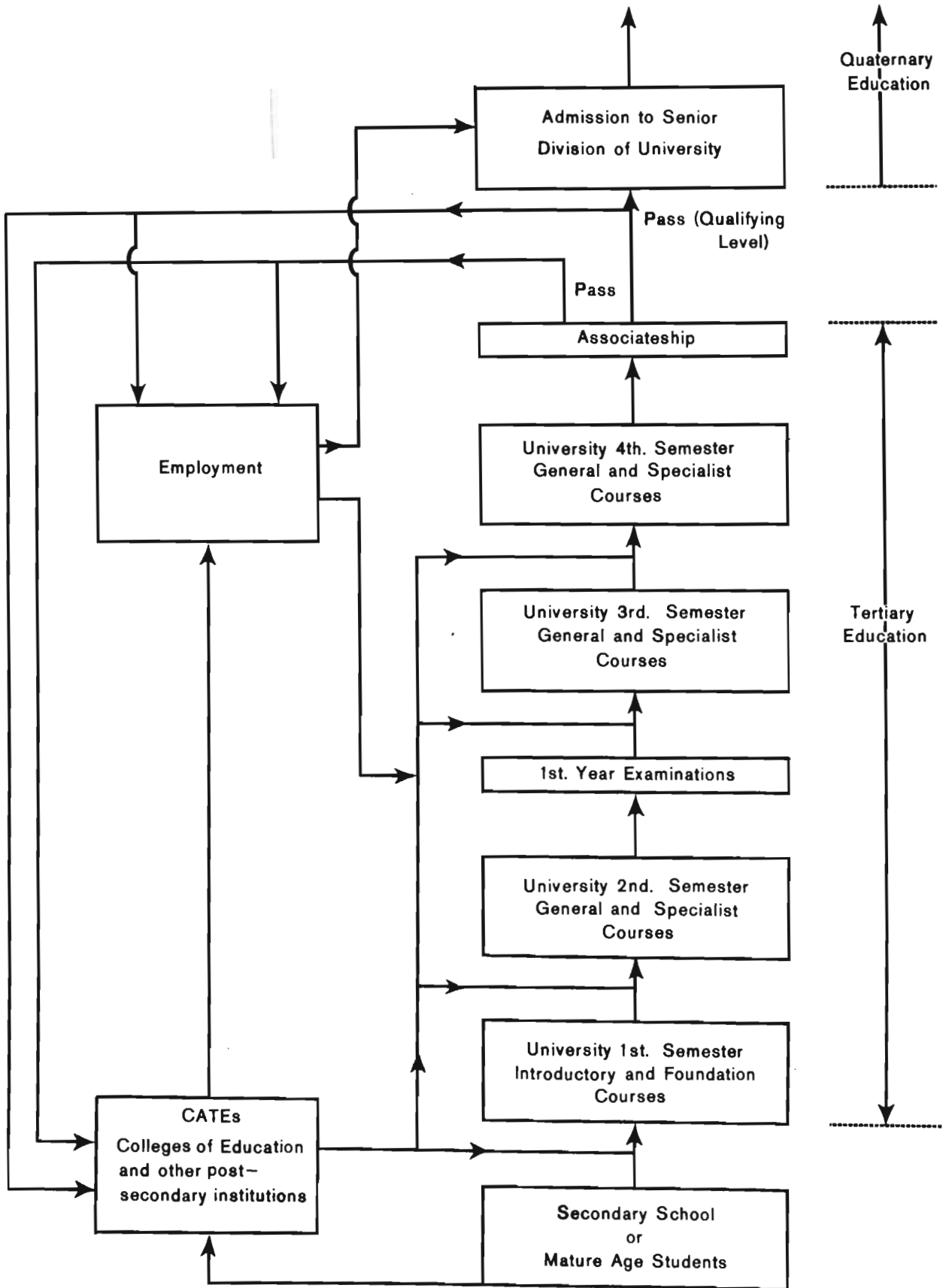
The need for greater articulation between the three sectors of tertiary education in South Africa will become greater as more young people matriculate and clamour for advanced education and some of those with talent are forced to attend either CATEs or colleges of education despite having been eligible for university entrance.

(b) An Associate Degree

It is also quite clear that South African universities have no intention of introducing a four-year initial degree to replace the vast majority of degrees which at present take three years to complete. However, the introduction of an Associateship (or Diploma of Higher Education) to create greater flexibility and articulation with other institutions, becomes more acceptable if one can accommodate this concept within the present BA or BSc (three- or four-year) structure in the following way in the universities:

DIAGRAM 11

Flow Diagram Portraying Suggested Academic Structure of a Junior Division (Years 1 and 2) at South African Universities



Such a degree pattern would not cause a major upset in time-tabling and traditional university vacations and it has the following advantages:

(i) It provides an intermediate qualification for the student who is not sure of his ability to complete a full degree but who desires to have some university experience. He can now leave with a definite qualification.

(ii) It does not change the basic three- or four-year degree in its outward form (although many internal changes would have to be made).

(iii) Better use would be made of the university buildings and equipment since they would be in use for longer periods (assuming that "summer sessions" or some such concept was provided).

(iv) For those students wanting to achieve semi-professional competence in a definite field the intensive two-year period would provide them with a worthwhile intermediate qualification (which could be used at a later date if the holder wished to complete a full degree).

If the CATEs and colleges of education, in close consultation with the universities, could also offer such a qualification (even if only to their matriculants) then the concept of articulation and greater flexibility could be established.

The fact that the Dip HE in England will soon be offered by polytechnics, colleges of education, universities and the CNAA does establish a pattern which South Africa could initially observe from a distance and perhaps one day adapt to her requirements.

In entering into liaison with the universities the South African CATEs and colleges of education need not necessarily give up their own particular emphasis since quite clearly (as happens in the United States) different types of associate degrees will be needed and it is feasible to conceive of an associate degree with a technical or teacher preparation bias.

If South Africa examines world trends she will observe the move in many countries towards comprehensive universities

(as found in West Germany, Denmark and other countries) and the distance between her three sectors of tertiary education will have to be examined and consideration given to a consolidation of all her resources into higher educational units (possibly in the same way that the United Kingdom Polytechnics were created).

One advantage in such a higher educational unit would be the rationalisation of the use of expensive equipment which would then not have to be duplicated as at present in many different institutions in an area. It would also mean that a group of institutions could join together and offer rare courses to lesser numbers of students which would simply not be feasible in an individual institution. Since the academic qualifications of some staff members at colleges of education and CATEs are now reaching an equivalent level to those of university teaching staff (and in some instances they are higher!) such a fusion of institutions is not altogether beyond comprehension although the basic difference of emphasis within the three sectors remains a problem. Even this last point is not insurmountable since universities are tending to move away from their classical, abstract tradition and become more practical in their approach.

If such a consolidation ever took place the question of articulation between the component parts of tertiary education would fall away since flexibility of movement would automatically result. This would also occur if all three types of tertiary institutions offered an associate degree of equal standing.

(c) Upper-Division Universities

Recent developments in the United States leading to the adaptation of some existing institutions, and the creation of some new institutions, to cater solely for upper-level students while the community colleges provide for the initial two years of tertiary education, are significant.

Perhaps universities in South Africa may one day have to assume an upper-division function, with colleges of education (in a changed form) and CATEs providing a broad base of

initial education and training lasting two years with professional courses (such as architecture or medicine), which are of longer duration than most degrees, remaining essentially within the universities.

Evidence in support of this concept is forthcoming from some educationists who wish to see higher education divided into two sectors - "tertiary", meaning all forms of post-secondary education other than universities and "quaternary", meaning exclusively university education. (1) Professor R.G. MacMillan, Vice-Principal of the University of Natal (Pietermaritzburg), recently made a statement which also hints at the possibility of the concept of an upper-division status for universities:

"The university, if it is to fulfil its true function, is certain to emerge above the tertiary level. The latter will become increasingly common, providing general and specialised education for two or three years in separate colleges which may eventually join to become multilateral colleges. The university will occupy, in fact, the quaternary level." (2)

If such a clear pattern of tertiary institutions was ever established with a quaternary level above them then the articulation problems could fairly easily be resolved as has occurred in the United States between the community colleges and many established upper-division colleges or universities or between the community colleges and full-range senior colleges and universities.

(d) Umbrella-University Concept

In a recent publication by the Organisation for Economic Co-operation and Development the concept of an umbrella-

- (1) Biebuyck, L.J.T. - Degrees by institutions other than universities - possibility and desirability Pretoria: HSRC, 1973. (p. 9) (Report No. 0-15)
- (2) MacMillan, R.G. - "The Changing Structure of Higher Education" Journal of Education Vol. 2, No. 1. University of Natal, July 1970. (p. 6)

university in the Netherlands is examined. (1)

South Africa could well consider such a concept which is reminiscent of the "comprehensive academic communities" which were brought about by the fusion of a number of existing colleges of various sorts to create the new polytechnics in the United Kingdom during the last seven years. In the Netherlands consideration has been given to the development of a strong form of co-operation between the existing universities and short-cycle institutions (SCIs) in the form of regional umbrella-universities. In this plan, universities and SCIs keep their own specific goals, but provision is made for co-ordination of curricula, co-ordination of the teaching staff, efficient use of the buildings and laboratories, easy transfer of students between the two sectors, common management with enough power delegated to the component institutions and the harmonisation of degrees and diplomas.

Such a concept might well be feasible within the South African context and the links established in the field of teacher training between some universities and CATEs could well be the forerunner of greater forms of regional umbrella-university adaptations. The advantages of an umbrella-university include the following:

- (i) Post-secondary education in a given region can be integrated and centralised thus allowing for better adaptation to the social and regional needs;
- (ii) Transfer between the several component institutions will be easier;
- (iii) Staff utilisation and the use of buildings and laboratories will be more effective;
- (iv) The social status of the education (and of the staff) of the former "less noble" institutions is likely to be upgraded.

(1) Organisation for Economic Co-operation and Development - Models of Short-Cycle Higher Education Envisaged in the Netherlands Paris: 21st October, 1971. (DAS/EID/71.70) (pp. 6-9)

If the joint management of such a co-ordination of all institutions in a given region remains restricted to common affairs only, and the component institutions are allowed to retain their autonomy in performing their own functions, then the umbrella-university concept will probably not encounter such great organisational problems and resistance.

In his recent study Biebuyck considered the idea of "a university 'umbrella'" for CATEs in South Africa when he wrote:

"Students at CATEs may, for degree purposes, be regarded as external students of the nearest university. While the colleges would set the examination, the university would act as external examiner and would satisfy itself that the standard measured up to its own degree requirements." (1)

However, Biebuyck rejected this pattern stating that the CATEs he had approached had not favoured this arrangement since they feared that they might be regarded as people who do not quite belong to the inner academic circle and are hovering on the outskirts.

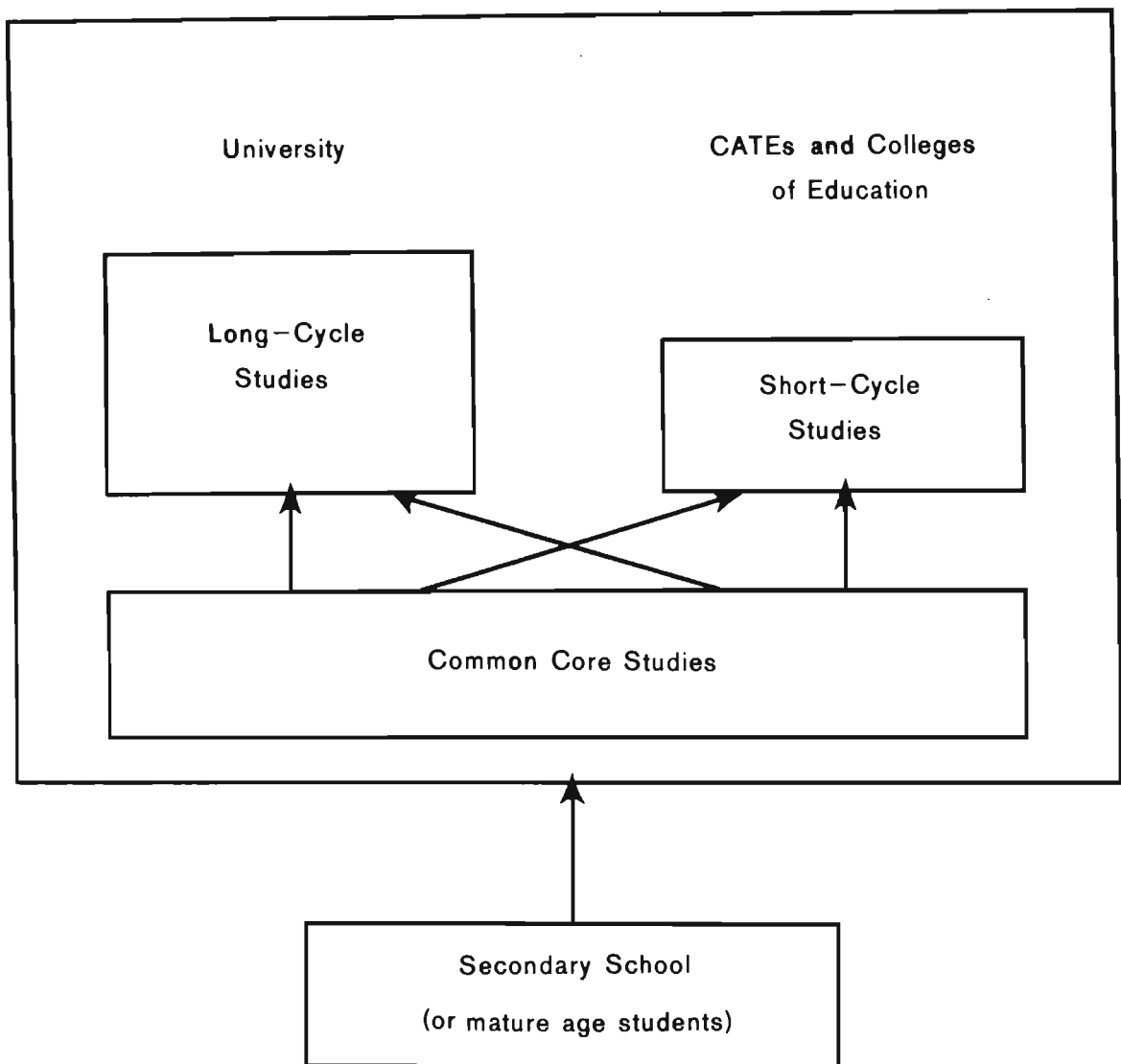
If the creation of some type of Associateship was ever considered in South Africa then perhaps the "umbrella-university with common core studies" would be more appropriate. In this special form of umbrella-university a common core of studies is provided which all students in a given discipline are required to take. On the basis of the results obtained in the compulsory subjects and the type of optional subjects taken, the student would be obliged to follow either the long-cycle scientific programmes or the short-cycle vocational programmes of the umbrella-university. Students would be able to take the common core studies at all component institutions of the umbrella-university and in this way greater flexibility and articulation between tertiary institutions would be achieved. The basic outline of this

(1) Biebuyck, L.J.T. - Degrees by institutions other than universities - possibility and desirability Pretoria: HSRC, 1973. (pp. 60-61) (Report No. 0-15)

kind of umbrella-university can be represented as follows:

DIAGRAM 12

Umbrella-University with Common Core Studies



Certain advantages are obvious in such an arrangement:

- (i) The student has more opportunity to decide what type of education corresponds to his abilities and interests;
- (ii) The possibility exists of regulating admissions to the various types of post-secondary education;
- (iii) There is more opportunity for all students to take the common core requirement close to where they live since the CATEs and colleges of education are fairly widely distributed.

Regional umbrella-universities, although impracticable at this stage of South Africa's development, are nonetheless worthy of serious examination since they do contain the embryo of a possible solution to her tertiary educational shortcomings and dilemmas.

H. Comment

Attempts at adaptation in South Africa will have to take place within the established pattern of financing, control and separate racial development and any proposals which are not feasible within the present educational structure will be merely idealistic pipe-dreams.

The emergent non-white groups in South Africa will soon comprise an educational force to contend with and unless this country makes adequate provision for their future technical training at secondary and tertiary levels, serious shortages of skilled workers could occur.

At the present time these proposals for some possible adaptations of selected short-cycle tertiary education concepts to South Africa appear to have the greatest relevance for the white group since it has achieved the highest level of educational development. As the non-white groups progress educationally so these ideas will have more relevance for them. Adaptations of any concepts to South Africa are made all the more difficult by the fact that in such a heterogeneous society the needs of society are possibly more complex than in a more homogeneous society.

A theme underlying this chapter is the certainty that the structures of education must change to suit current needs

and that programmes and courses must gain more relevance and meaning. A viable pattern must be created which will provide tertiary education for all who want it and need it and so help solve many economic and social problems.

5. SUMMARY OF MAIN RECOMMENDATIONS

A. An Intermediate Degree

In order to help overcome the high university failure rates it is recommended that serious consideration be given to the creation of an intermediate degree or diploma which would be accepted for credit (under certain conditions) at all tertiary institutions of education in South Africa. The precedent for such action has been established by two leading countries, namely the United States (Associate Degrees at community colleges) and England (Diploma of Higher Education to be awarded probably throughout the tertiary sector). Many other countries, for example, Japan, Norway, France, Yugoslavia, Holland, Canada - to name but a few - have also introduced an intermediate qualification placed between the end of high school and the first degree.

It is recommended that this intermediate qualification should be fitted into the present structure of tertiary education with a minimum of upset and with minimum costs. This recommendation certainly does not envisage, at this stage, the construction of new institutions but rather an intelligent use of existing institutions and a rationalisation of facilities and staff.

B. More Recognition for the CATEs and Colleges of Education

Also in order to reduce university failure rates and partly in order to prepare for the advent of mass tertiary education in South Africa, it is recommended that ways and means be considered of giving greater recognition to the CATEs and the colleges of education without detracting from, or lowering the existing "standards" at universities. The precedent for such a step has been established in a respected system of world-standing, namely, England. In that country the creation of the CATs which eventually became technological

universities, the creation of the CNAA which gave colleges of further education and the new polytechnics access to full-fledged degrees, and the provision of a means for some students at colleges of education to gain a B Ed degree, provide very clear evidence that such events, if feasible in England, might possibly also be adaptable in South Africa.

A main problem in achieving more recognition for the colleges is the enhancing of institutional status. In England, the B Ed, as proposed by the Robbins Committee, experienced this same problem and any proposals for such steps in South Africa will most likely experience even more problems. For this reason it might prove necessary, at least in the teacher training field in South Africa, to interpose an interim organisation such as has been the case with the Area Training Organisation/Institute of Education pattern in England. This organisation could then be disbanded (as is the case in England) once institutional status had been established.

If CATEs and colleges of education could be made "more noble" and achieve greater academic respectability then many students would be drawn to them instead of entering a university and joining the large numbers of drop-outs or failures.

C. A South African CNAA and "Open" Enrolments

It is recommended that means be explored for encouraging mature and young employed people to study further without reference to their educational past. The creation of a South African CNAA which would validate (in some way) top quality work done at non-university institutions could well make allowance for non-matriculants who have elevated themselves to acceptable standards of achievement. A South African CNAA could also resolve the dilemma of, for example, the Pharmacy Diploma at CATEs by awarding a full degree to successful candidates.

Once again the precedent has been set by the establishment in England of the Open University which was designed to help

the mature person who had not previously had access to tertiary education. It is recommended that immediate attention be given to the creation of a South African Open University in order to crystallise thinking in this field by the time the new television service starts in 1976.

Various forms of non-traditional study have been successfully implemented in many different countries and it is recommended that South Africa consider its own form of CLEP in order to augment the valuable correspondence programmes offered by UNISA.

Allied to all these recommendations, which are designed to tap the unused talent in our adult population, would of course be a re-examination of the functions and purposes of the JMB. The creation of a South African CNAA or a South African Open University or CLEP (1) would naturally impinge on the work of this respectable, statutory body and a great deal of clarity would have to be gained about the possible functions of new concepts before any change could be made to a body which is functioning well.

Also included within this examination of the JMB functions and the desire to create more opportunities for mature students would be a consideration of "open" tertiary education. Once again the precedent has been established, not only by most of the community colleges in the United States, but also by the prestigious CUNY in the same country and the oft-mentioned Open University in England. The proposal to consider "open" education is not made with any intention of lowering so-called standards but merely to create greater flexibility and articulation between institutions. However, any diploma or degree award made within such a possible "open" tertiary system should not be materially different from present standards and should only be awarded to people who, irrespective of their previous records, have

(1) A South African CNAA and/or Open University and/or CLEP should perhaps be considered as a possible UNISA development rather than as the creation of a new university or university-level body.

really proved their competence in full competition with matriculated students. The question of "open" admissions resolves itself quite quickly - either a student can do the job or he can't - and CUNY, for example, has not found that the creation of an "open admissions" situation has led to a floodtide of students nor to markedly different failure rates.

Even Harvard University has a Commission on Extension Courses on their campus where students can enrol for a Bachelor of Arts in Extension Studies or an Associate in Arts in Extension Studies. Formal entrance examinations are not required for admission to either of these programmes. However, those who have done no previous college or university work must complete satisfactorily the equivalent of one year of college work (four full-courses or eight half-courses) and when the student is admitted for the degree, these courses count retroactively. This procedure at one of the world's leading universities not only endorses the concept of "open" entrance but it also seems more logical than the demands often made by the South African JMB of some of their "mature age" students who are granted conditional exemptions, and more easily managed than the complex set of regulations controlling conditional matriculation exemptions.

D. The Co-ordination of all Tertiary Education

In order to bring about greater articulation and co-ordination among the component parts of the South African tertiary education sector it is recommended that a body be appointed to oversee all tertiary education, not with a view to directing it, but in order to create greater flexibility and awareness of the problems of each component part and also to build bridges between them. The precedent for such action has long been established in, for example, the United States where bodies such as the State Regents of New York have jurisdiction over a vast number of students and institutions. The California Master Plan for Higher Education is yet another classic example of the co-ordination of three parts of the tertiary sector in order to rationalise

facilities and to create maximum diversity and flexibility. West Germany has a Wissenschaftsrat which is an expert planning body for the whole of tertiary education and even in England there has been talk of a Higher Education Commission (cf. Willey Committee report) to co-ordinate the three main components of higher education.

Closely linked to the establishment of such a body in South Africa would be the recommendation that a commission be appointed to examine the whole of tertiary education i.e. with much broader terms of reference than the Commission of Inquiry into Universities in the Republic of South Africa which was appointed in September 1968, and which has not yet presented its report. The report of a commission of inquiry into the whole range of tertiary education could well lead to the creation of a co-ordinating body to encourage and promote tertiary education and to act as a means of liaison between different types of institutions.

Such commissions of inquiry are fairly common in many countries, for example, the Robbins Committee in England, the Martin Committee in Australia, the Royal Commission for Higher Education in Norway, the Royal Commission of Inquiry on Education in Quebec, the Commission on Post-Secondary Education in Ontario, to name but a few. It is true that the Commission of Inquiry into Universities in the Republic of South Africa will no doubt present a valuable, much-needed report which could benefit the universities considerably. However, the contention is that not only are commissions of inquiry needed into the individual components of tertiary education but also to examine the full range of this sector and its possible co-ordination.

E. Community Involvement

Since there is a lack of public knowledge of, and genuine interest in, the three sections of tertiary education in South Africa, it is recommended that all tertiary institutions (to a lesser degree the CATEs since they do so already) make a serious effort to include their respective communities in order to eliminate any barriers which exist. This public

estrangement and unhealthy "awe" stems mainly from ignorance of the real functions of these institutions and also partly from the fact that some of these institutions have been preserved almost exclusively for the chosen few. Public alienation is often aggravated by the better-than-thou approach of many academics and the desire of some senior university members to prevent the universities from becoming "folk" institutions by hiding under the concept of the "preservation of standards". It is therefore recommended that tertiary education institutions (more particularly universities and colleges of education) should make a concerted effort to provide community services which will create greater opportunities for members of the public to further their education and create a much closer bond between universities and the man in the street.

It is also recommended that greater encouragement be given to industry and big business to contribute far more, financially and in expertise, to the creation of effective programmes which reveal more relevance to daily needs. In so doing the world of private enterprise will be investing in and promoting the very institutions which are entrusted with the task of training their future senior personnel. The involvement of large employers of professional men and women in the creation of valid programmes (as at the CATEs) would possibly make these enterprises more willing to provide extra financial support for the universities of our country.

F. Recurrent Education

A persistent sub-theme of the recent White Paper in England entitled Education: A Framework for Expansion, was the concept of recurrent education. This concept permeates much of the planning of short-cycle and other tertiary institutions in Europe and many parts of the world. Is there any country in the world having sophisticated levels of tertiary education (this would apply to white South African institutions), which can afford not to take cognisance of this trend towards recurrent (permanent) education?

For this reason it is recommended that institutions at tertiary level in South Africa should acknowledge the fact that no person will in future be able to gain a qualification and simply "rest on his laurels". The process of updating knowledge is now continuous and the re-training of skilled workers to promote increasingly advanced skills and adaptations to rapidly changing needs in industry and the professional world, will have to be considered as an integral part of future education planning. Coupled with this need for plans to accommodate recurrent education in our institutions is the more recent development in some disciplines, especially those in which knowledge expansion rates are prolific, whereby some degrees at post-graduate level are only valid for a specific period (such as the advanced degrees at the Atomic Research Centre at Saclay in France which are only valid for five years).

Corroborative evidence in support of this appeal for serious consideration of recurrent education appeared recently in the South African Medical Journal (1) which pointed out that doctors should accept the idea that although medical education begins at university it should only cease when they end their careers. For this reason a symposium on continuing education for doctors was held in October 1973, at the South African Institute for Medical Research in Johannesburg. The Journal stated that compulsory re-testing of doctors would be unpopular with the profession and that a more positive and acceptable method would be to allow participation in continuing education programmes which lead either to financial or status rewards (a method which has been successfully applied in Great Britain).

An acceptable definition of this concept has been framed by Denis Kallen of the Centre for Educational Research and Innovation, Unesco, in the following way:

"Recurrent education is a comprehensive educational strategy for all post-compulsory or post-basic education, the

(1) Editorial in South African Medical Journal (Vol. 47, No. 39) of 6th October, 1973. (p. 1769)

essential characteristic of which is the distribution of education over the total life-span of the individual in a recurring way, i.e. in alternation with other activities, with work in the first place, but also with leisure and retirement." (1)

This definition, which forms the basis of this recommendation, contains two essential elements which state succinctly the objective of this concept:

(i) It offers an alternative to the conventional system by which all formal and full-time education is concentrated in youth, between the ages of 5, 6 or 7 until entry into active life, and it proposes to spread post-compulsory education over the full life-span of the individual. Thus it accepts the principle of life-long learning;

(ii) It proposes a frame within which life-long learning will be organised, this frame being the alternation and effective interaction between education, as the structured learning situation, and other social activities during which incidental learning occurs.

In many parts of the world short-cycle tertiary education institutions are being used to promote and serve as a base for recurrent education and it behoves South African educators to undertake serious consideration of these developments.

6. CONCLUSION

Considerable evidence has been presented in support of the thesis that there exists in many parts of the world a developing trend towards short-cycle tertiary education. Few people would be able to dispute this fact although its nature, significance, value and future impact are most certainly open to speculation.

The links between short-cycle tertiary education and other forms of tertiary education have been analysed in

(1) Quoted in an article by A.H. Halsey entitled "Essentials of recurrent education" Times Higher Education Supplement, 18th May, 1973. (p. 7)

different national contexts and emerging from this study has been the indisputable move away from elitism towards a stage of liaison and co-operation between "noble" and "less noble" sections of the tertiary sector.

The examination of the trend towards short-cycle tertiary education in selected countries has revealed that many major systems are involved in this process of reappraisal of the immediate post-high school period. Although the countries selected for examination were chosen mainly because of the author's acquaintance with them, they nevertheless represent the most respected and most influential educational systems in the world. It is reasonable to assume that if such venerated systems as those in England, France, Germany, the United States, Canada and Japan have made definite moves to implement short-cycle tertiary education institutions and qualifications, it is likely that lesser systems will also be influenced in that direction since many countries accept educational leadership from these major powers.

The last chapter of this study has been undertaken for the very reason that South Africa is one of these less-developed, less-sophisticated systems which inevitably must take cognisance of discernible trends in other countries and, in an eclectic way, try to glean what will be of greatest value for adaptation to her own system.

The undeniable permeation of this whole work by American Community College patterns has resulted from the fact that this is probably the oldest, best-established and most-developed set of institutions which can quite certainly be labelled short-cycle tertiary education. These institutions have exercised great influence over the development of similar concepts in a host of countries and this thesis could not have been written without making constant reference to them and to their various practices since they are foundation members of the short-cycle tertiary institutional concept.

The main objective behind this thesis has been to stimulate thought and to create a greater awareness of relevant trends in this field. However, the awakening of thought to the potential and possible adaptation of ideas is not enough if it does not stir men to action and even deeper research.

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