



A NEW UNIVERSITY IN THE MAKING

Text of the Address of the Vice-Chancellor,
Y. B. Tan Sri Professor Hamzah Sendut,
at the Official Visit of the Higher Education Advisory Council
to the Universiti Sains Malaysia
on 3 May 1973.

KOLEKTI ARKIB UNIVERSITI



..... viewing the University as it is today when it is only four years old, one sees every reason for pride, strong grounds for hope and none at all for despair.

It seems fitting to mention on an occasion such as this, that much energy has been expended in moulding the University into what it is today. Its teaching and research efforts are being consciously geared towards a few but highly significant branches of knowledge; rather than spread its limited resources thinly over a wide range of studies, it endeavours to refine and perfect a few ideas. The imminent need to counterbalance the current oversupply of pure arts graduates and to respond to national and social demands has prompted this University to provide a clear thrust into the scientific and technological fields, by offering pertinent courses currently not available in Malaysia. Besides, in fulfilling its social responsibilities to the nation that nourishes it efforts, the University also offers higher education to full-time working adults who desire a degree qualification.

Other highlights in the development of the University to date, include the provision of a preliminary science course for Bumiputra students, the expansion of the Academic Staff Training Scheme and the Administrative Staff Key Personnel Training Scheme; the promotion of a Students Training Scheme which provides students with the added dimension and asset of practical experience, concurrent with their studies and finally, the establishment of strong ties with selected universities overseas. Into the bargain too, was the timely acquisition of Minden as its permanent campus in February 1971 and with the first convocation held in June 1972, the University had already acquired a certain vitality that emanates a distinctive personality of its own. The overall progress has indeed been satisfactory and viewing the University as it is today when it is only four years old, one sees every reason for pride, strong grounds for hope and none at all for despair.

The details of these efforts have been described in the University's publications which were earlier distributed through the office of the Secretary to the Council; it would be unnecessary to repeat them here. Nevertheless, notwithstanding these details and the progress so far achieved, it cannot be denied that much remains to be done. The Science Complex financed through the World Bank loan is expected to be completed only in late 1975. As such, renovation and remodelling of existing buildings will still continue for some time and it is likely that the University will still have to tolerate a few more years of makeshift accommodation.

The first four years were difficult but challenging years as the University's requirements had to be attended to simultaneously; the next phase in the University's development is also expected to encounter problems and issues requiring much ingenuity to resolve.

STUDENT NUMBERS:

Among the many significant issues that both young and established universities face, is one that relates to the question of ultimate size in a University's growth. While there is no standard answer to such a question, we nevertheless, have to consider our social obligation to meet public demands for increased higher educational facilities in Malaysia. This is because, contrary to popular viewpoint, the maximum requirements of graduate manpower trained in the required skills, sufficient to sustain economic growth and modernization in Malaysia, are yet to be attained. At the same time, the University cannot afford to grow so large as to lose the element of intimacy; neither should it remain so small as to become a target of public criticism. There are already approximately 2,000 students on campus and if size is to be reconciled with intimacy, this University is expected to hold an optimum student population of 10,000. It is likely that this figure will be reached by 1990 or even earlier, considering the increasing numbers of students sitting for the Higher School Certificate Examinations annually.

As applications normally exceed the limited number of places available, the method of selection for admission into the University will always attract widespread interest. For the candidate himself, his chances of higher education depends on the method of selection; as for parents, they are morally responsible for their children's education and a university degree is a useful status symbol; heads of schools are interested in the prospects of their sixth formers and are generally conscious that the prestige of their schools is reflected in the number of university places obtained by their students; university lecturers, realizing that the quality of the students admitted affect the standing of the University, favour the intellectual pleasure and stimulus derived from teaching academically mature and intelligent students; national policy-makers, however, insist on a more liberal admission policy to ensure that the pressing demands for increased science graduate output may be realized faster.

Any University worthy of its name has to concern itself with intelligence which is clearly important as it is necessary that all candidates should have a certain common background of basic knowledge that can be taken for granted. Besides the overriding aims of a University institution, other considerations include the student's capacity to work independently when freed from the close supervision of school and a genuine love for knowledge. Nevertheless, there are many who excel in their school studies but wane academically when they reach university level; there are others with unimpressive school records who develop brilliantly on reaching the type of environment that a university offers. These are the "late-bloomers" whose chances of attaining a university education may depend on the accident of whether they took the school leaving examination just before, or just after a period of quickened intellectual development.

At the same time, it is desirable that a prospective student should enter a university according to his academic inclinations, based on the courses available. Any other basis would be misleading, for obviously, a candidate keenly interested in Islamic studies, medicine, agriculture or engineering would apply to the university where such a course is

available. This is significant from the national point of view, for each university is expected to develop its own identity and strength, at the same time remaining complementary and non-duplicative. However, whatever the criteria used, all universities are national. There should not be the national or the national-type university since the country can ill afford to forgo the returns to be expected from its valuable investment in higher education.

The proposed Constitution of this University also recognises the special consideration to be accorded to students who are awarded Federal or State Scholarships, loans or other similar financial assistance from public bodies. It provides that they shall not be refused admission, except with the concurrence of the Ministry of Education, if they satisfy the entry requirements prescribed by the University. This provision is because of disproportionate rates in educational development among the States of Malaysia. The best schools are located in areas with the longest exposure to foreign influence, such as Malacca, Georgetown, Kuala Lumpur, Ipoh, Johore Bahru, among others. If admissions are decided solely on merit, the vast majority of successful applicants will come mainly from these centres. As Yang Arif Tan Sri Justice Suffian has remarked, it would be grossly unfair to exclude pupils from isolated areas where teaching facilities are inadequate and where it is difficult to induce good teachers to devote long service. The Malaysian secondary school system does not effectively prepare youths to face the facts of life except to continue studying for its own sake. While this is egalitarian in concept, it spells an ever-increasing demand for the limited number of available places in the University.

It may be possible to solve this problem by increasing staff numbers; acquiring additional space and extending lectures, tutorials and seminars into the night; re-examining the present system of lectures-cum-tutorials; introducing new audio-visual aids into lecture theatres; establishing a new system of examinations and evaluation and introducing objective testing. These are however, short-term measures which do not necessarily answer the question of how to maintain quality education despite an increasing number of students. Transforming existing institutions into universities and establishing new ones do not necessarily guarantee high levels of achievement and the right approach to training that is professionally accepted and educationally sound. Although their vice-chancellors and staff can vouch that the level of instruction and the academic quality and standard of their graduates have not been impaired, the Higher Education Advisory Council should recognize the utmost importance of quality education, as being central to the whole system of higher education in Malaysia.

COURSES OF STUDY:

The choice of courses to be offered at university level can evoke lengthy discussions; while few differ on the functions of a University, many will disagree on the direction which university education should take. This is natural because of varying emphasis accorded by parents, administrators, educationists, politicians or plain interested individuals. It can be argued too, that higher education is an upward extension of the education pyramid generated at the primary level, through to the secondary and tertiary levels. This implies that degree courses have to consider the variable curricula and the examination system devised at the school level. Otherwise, a radical departure from an existing system

of education may create too wide a chasm for the university to bridge during the period of three or four years needed to acquire the first degree.

As far as the Universiti Sains Malaysia is concerned, the temptation to follow the set pattern established by the University of Malaya were not easy to resist, considering that it would have been more convenient to borrow old courses than to devise new ones. Fortunately, however, the Report of the Higher Education Planning Committee published in 1967, provided a guide to fields of study that should be taught and new fields that might be introduced at university level. The Committee perceived a continuing need for graduate manpower in the humanities, social sciences, natural sciences and education and a fresh demand for graduates from new fields of study such as building science and technology, communications and journalism, library science, creative arts, material science, marine and inland fisheries, oceanology, pharmacy, fibre science and technology among others. In fact, a great variety of courses could have been introduced at this University, but the final choice of what to teach was guided by three fundamental principles, as follows:—

(i) National Needs:

Although this is difficult to identify precisely, the University has to concern itself with both present and future requirements. It has to commit itself not only to the next decade but also to other decades beyond the 1990's into the twenty-first century, which is just thirty years away. It must exercise foresight in predicting the needs of the nation for many years ahead and in gauging the potentiality of new fields of study not yet exploited.

(ii) A Personality of its Own:

While this University is as national as any other Malaysian university, drawing upon students from all states, it nevertheless, has to develop its own personality and identity which conforms with the dictates of the Incorporation Order of 1971; at the same time it has to consider the manufacturing and agro-industries of Pulau Pinang, Kedah, Perlis, Perak, Kelantan and Trengganu in which region the University is located.

(iii) Balance of Academic Subjects:

The balance of subjects between the natural sciences and other sciences within the University is an equally important factor. Although there is no easy formula on how this can be achieved, account has been taken of fields of study currently available at the University of Malaya in Kuala Lumpur. Since funds for higher education are limited, this University will not duplicate courses already available elsewhere without very good reasons. Instead it

emphasises the important role of providing complementary efforts in higher education and of instituting fields of study currently unavailable or not yet fully developed at university level.

Thus, while core courses are taught, there is also a conscious orientation towards fields which reflect the scientific realities of today. In the field of **biological sciences**, teaching and research are focussed on hydrobiology, entomology, parasitology, plant pathology and microbiology; in **chemical sciences**, options are provided in organic, inorganic and physical chemistry, while research interests in **physics** dwell on solid state physics, electronics, biophysics, geophysics and theoretical physics. As **mathematics** and computational science are a separate discipline, yet integral to all sciences, they are to be organised separately.

The development of a bold and imaginative programme of **social science** studies would be advantageous in assisting our nation to solve its increasing economic, social and political problems. Since north-western Malaya provides a unique laboratory for the investigation of a variety of contemporary phenomena there is an urgent need for the University to be dynamically involved, preparing critical analyses and submitting constructive ideas for the resolution of these problems. To this end, it requires the development of vital academic disciplines such as industrial economics, urban sociology, social anthropology and political science, with research and teaching geared to the problems of industrialization, urbanization, race relations and national unity, urban and industrial sociology, the impact of modernization on man and political organizations.

The approach to these studies is interdisciplinary, a distinctive contribution by this University to the Malaysian system of higher education. This is because such research is still in its infancy in Malaysia. When fully developed, it should influence the orientation of higher education generally and produce more university teachers imbued with the desire and ability to investigate the inter-relationship of their special interests with other areas of inquiry, combine resources and conduct team research for the understanding of current social events and situations.

Like studies in the social sciences, courses in the **humanities** such as philosophy, fine arts, performing arts, literature, history, geography and mass communications are also given their due importance. This is because there is need to sharpen the perception of Malaysian graduates by providing them with a basic foundation for the understanding of what is distinctive in this country in particular and in Southeast Asia in general, and to enhance their appreciation of external traditional influence on the original cultures of this region. The purpose is not so much to develop professional dramatists, artists and poetry-writers, as to allow undergraduates to develop their creative faculties which are equally important in and vital to any scientific and technological society. Indeed, it may be argued further that the development of a national identity through the promotion of a common national language and unified social action, involves the development of literature and other creative arts as well as the adaptation of traditional aesthetic and moral values

to the economic exigencies of today. The teaching of Southeast Asian and other selected languages for the understanding of other cultures may facilitate these efforts.

Since the pattern of economic development in Malaysia today is expected to require and generate social change, the University has another major role to play. This is in the field of providing undergraduate preparation for teaching science in secondary schools. Apart from achieving the most effective training of specialist teachers, it attempts to relieve shortages and to broaden the vision of all teachers by providing them with an insight into scientific innovation and technology as well as a fair grounding in mathematics and two other science subjects from among biology, chemistry and physics.

The University also embraces technology as a discipline. It is believed that the best way to train a man for a particular job is not just to teach him in detail how to tackle the various contingencies that arise in his chosen profession. He should also be given a good general education so that he is well equipped to exercise sound discretion when necessary. The maximum requirement of manpower, trained in modern technological skills necessary to improve the level of productivity and to sustain the tempo of economic and social development is not yet fully realised. As such, the additional thrust that the University provides into the applied sciences is considered a step in the right direction. In view of its strong base in the biological sciences, chemical sciences and physics and mathematics, the University avails itself of these programmes by embarking on new fields of study such as Pharmaceutical Sciences, Applied Sciences and Housing, Building and Planning.

While the **School of Pharmaceutical Sciences** requires students to follow courses in pharmaceutical chemistry, the physiological basis of drug action and pharmaceutical technology, the **School of Applied Sciences** provides a four year undergraduate programme designed to produce technologists for gainful employment in the industrial sector. In the latter case, a basic grounding in the principles of chemistry, mathematics and physics or biology, is provided in the first year of study when students are attached to the natural science schools. The remaining three years are devoted to progressive specialisation in a major field of their choice, from among courses in rubber science and technology, fibres science and technology, electronics science and technology, plastics science and technology, food science and technology and minerals science and technology. Practical work will form an important aspect of the degree programme, whilst final year students may be required to present a thesis, based on a research project to be conducted during that year of study.

The primary purpose of establishing the **School of Housing Building and Planning** is to produce technologists who will be educated in the basic physical and social sciences relevant to planning and building, have some design skills, a grasp of building technology, surveying and building economics and in addition, have management training. They are

expected to have a broad understanding of the whole physical development process as well as specific implementation skills. We view the mastery of this field as the definition of a new discipline rather than a "jack-of-all-trades". Like the 'arts' graduates who assume roles in administration, management, finance, tourism and development, so too, these technologists can assume responsibilities as development officers, project managers, city managers and professional constructionists. They should also be competent in work which require not so much professional qualifications as graduate intelligence and standards. In some cases, specialised professional qualifications are too narrow in scope for the task; in others, specific skills will be needed especially in management not currently part of the education of the established professions.

Because the construction industry lacks professional manpower, this School also intends to rectify the shortage of urban planners, building technologists and environmental scientists. With qualified staff, it should be able to organise in collaboration with the University of Malaya, further training courses for engineers, architects and planners to enable students to delve more into the general and theoretical aspects of the profession which they have been unable to assimilate fully, during their initial training.

FUTURE COURSES:

As for the period beyond 1975, when the processes of consolidation begin to operate in the existing schools and centres of study, new courses may be planned to respond to the changing circumstances within Malaysia and the thrust required to be achieved. Considering the University's role in vocational training and the expected graduate manpower needs, a **School of Nursing** is proposed to offer programmes in professional nursing, technical nursing and dental hygiene, leading to the degree of Bachelor of Science in Nursing. This is of unparalleled importance to the public, the medical service and the nursing profession in Malaysia, because for the first time, an attempt would have been made to solve the quality-quantity imbalance which has always bedevilled the Malaysian nursing service. Moreover, like other professional personnel, a high standard of nursing performance is also required. Obviously, this depends on the right mix of educational opportunity, a highly-motivated workforce and accurate estimates of the staff number and categories required to provide service.

Insofar as the University is concerned, nursing education should be continuous for all categories of staff in the medical and health service. The education system should provide the flexibility required to enable nurses to enter, leave and re-enter the profession whenever necessary. At the same time it should enable them to deepen and broaden their professional knowledge at the points of re-entry. Moreover, recognising the 'right of every person to achieve his or her maximum potential, there is need to attract women and men ranging from average to the highest level of aptitude. The role of the University is therefore, to educate

nurses **for** service rather than **by** service and to obtain between two to five percent graduate nurses among all nurses in Malaysia.

There are however, other areas of study, but detailed information is limited. Pending a deeper analysis of the needs of our nation, the proposed **School of Insurance Studies** will offer students a broad foundation of courses in the humanities, the social sciences, a core of basic courses in economics and finance and a specialised field of study in insurance, real estate, property valuation and business analysis. The **School of Military Science** on the other hand, will offer a general military science programme to students to qualify them for the degree of Bachelor of Science (*Military*). The basic course will be designed to provide the students with a general knowledge of military science, the social sciences and the humanities. This will be followed by advanced courses in military training, military management and military law.

Beyond these undergraduate studies which have been described briefly, postgraduate work leading to advanced degrees is also an essential programme in the development of this University. This is especially so because of the increasing need for a greater number of professional researchers and university teachers in Malaysia. Two types of courses are now underway and are expected to be further developed in the near future. The first type involves an intensive study of one subject; the culmination of specialisation that begins in the second year of the undergraduate course. The second is expected to be more vocational and professional. It embraces some of the more practical applications of such academic disciplines as the natural sciences, applied sciences, social sciences, pharmaceutical sciences, building sciences, education and the humanities.

HOW TO TEACH:

Within the context of present day Malaysia, the role of the university as an agent of change also appears paramount because in supporting the national language policy, it is obliged to provide the leadership in progressively implementing the national language for teaching science and technology subjects. The policy of using the national language as the main medium of instruction, with an international language as the second language is also practised in universities in other developing countries. However, the question which frequently arises is how to implement such a policy to encourage future graduates to use the national language in their work and yet retain a mastery of the international language.

This University makes the study of **Bahasa Malaysia** an integral part of all courses. This is not only because it is the official language but also because it is necessary for field work investigations and research in the Malay world, besides being an essential qualification for jobs in education, government, business and industries. The method is innovative and is applied in the examination system by requiring students to answer in Bahasa Malaysia, a

proportion of their sessional examination papers in all subjects studied; the other papers are to be answered in the English language. Thus, students are expected to be fluent and proficient in both languages. For this academic session, [the stipulated requirement for first year science and all social science, humanities and education students was 46 percent of all examination answers; it is intended that this percentage of examination answers be progressively increased until 1983 when 82 percent of all first year examination answers will be rendered in Bahasa Malaysia with the rest in English.

By adopting this pragmatic approach, it is possible to obviate the difficulty arising from the fact that about half the staff members are non Malaysian and therefore imperfect in the language and from the fact that not all students are fully conversant in Bahasa Malaysia. Moreover, local staff members who pursue Ph.D degrees overseas require time before they can impart their specialised knowledge proficiently in Bahasa Malaysia. However, with the present opportunities provided for learning it through regular evening classes and intensive courses, many have said that it is much easier to use the language to assess examination scripts than to lecture with. The alternative to this pragmatic approach is to use the language fully for all courses. This will obviously require the full complement of proficient staff. As such staff members are scarce and as many of them are relatively new to university teaching, they may lack experience in depth, thus compelling them to resort to teaching from textbooks or teaching what they have learnt. In either case, their instruction will become less meaningful or inadequate for the purpose of University education.

This is not to say that no attempt is being made in this University to use Bahasa Malaysia. On the contrary, local staff are obliged by contract to master the language before they are considered for emplacement on the permanent establishment. They are provided with facilities to enable them to obtain a level of proficiency with which to conduct lectures, tutorials and seminar classes. Students too are required to pursue a compulsory course, Bahasa Malaysia Moden, for a period of three years and should they fail the course, they run the risk of having their degree withheld. Students from Sarawak and Sabah who have not yet acquired a working knowledge of the language are given additional tuition classes, while students from the Malay medium schools are taught remedial English to enable them to gain a command of the language with which to attend lectures. Meanwhile the University Standing Committee on Istilah, organised in 1970 is coining new terminologies in close collaboration with the Dewan Bahasa dan Pustaka and disseminating them for the University's use.

The organization of courses in this University is based on the concept that knowledge is indivisible and unlike other universities in the country, it operates **schools of study** as the chief academic units. This is a departure from the multi-department faculty system which is prone not only to centrifugal pulls but also to problems of duplication in the specialisation of staff, equipment and financial resources. It is known that each department

within the faculty assigns itself the responsibility of teaching every course. This means more staff and a further proliferation of course offerings often lacking coordination in teaching and research, if not a total absence of inter-department approach towards both. Although the operation of a school structure in this country is still limited, the current experience of this University suggests that such a structure is flexible. It allows the teaching of related subjects under a single administration and the judicious use of equipment and funds. By grouping related subjects into schools of study, students can follow integrated and balanced courses and teachers can share common facilities. This system allows for a certain degree of specialisation in a chosen field of study, while encouraging interdisciplinary studies in related fields. It is inevitable that a few of these schools may overlap, but at least the close association of subjects is assured.

Each school is expected to be large, the view being that only large schools can provide such teams of experts in the different branches requiring investigation in the course of a single project. Moreover, research work today requires the use of much varied equipment and facilities which are becoming increasingly complex and expensive. Large schools are also necessary to recruit and retain first rate staff because the best scientists not only insist on laboratories with the latest equipment, but also seek the collaboration of eminent colleagues. One good scientist attracts another and he in turn attracts good students.

However meaningful the courses are and no matter how they are organised, students are normally preoccupied with the **conduct of examinations**. This is understandable since examination results are a convenient way of satisfying future employers and only those who are indifferent to earning a living deem it unnecessary. Indeed, even the best students are anxious about examinations since they realise that their opportunity of pursuing a life-time career greatly depends on their results. However, examinations are a necessary constraint to all students in their pursuit of academic goals.

Basically, the system that is being adopted in this University attempts to reduce tension and frayed nerves by introducing a continuous review of students' progress throughout the three or four years of study. This is reflected in the system of supplementary examinations, the results of which enhance progress but do not affect the student's final degree classification. Provisions are made, wherever feasible to encourage students to improve their performance. Thus, it is hoped that the system brings out the constructive and not the repressive effects of examinations.

All undergraduate students are admitted to courses leading to an honours degree with the term "honours" signifying a level of attainment and not a type of course. A degree course in the natural sciences, the social sciences and the humanities requires three years;

a course in science with education or humanities/social sciences with education, like the degree course for applied sciences, pharmaceutical sciences and housing, building and planning takes four years.

The student's final degree classification is based on his academic performance throughout the whole course of study. Class work and practicals are also duly considered. Some schools require a student to submit a dissertation or to undertake a small research project which is assessed in the final examinations. This combined basis of assessment takes into consideration all the capabilities of the students. However, in special cases, the Board of Examiners may base the award of degrees solely on the final year performance. This may happen where a student for some reason fails to perform as well as to be expected in his first year of study, but gradually shows marked improvement and indeed attains a creditable standard in the final year examination. In such a case, his final performance may be given more important consideration. Another significant feature is that candidates who repeat any year/s will not be barred from receiving the honours degree so long as they achieve the satisfactory standard. Candidates who fail in their final year examination and are refused permission to repeat, can re-sit the final year examination as external candidates, only once. Those candidates who fail to reach the Honours standard and are consequently awarded only Pass degrees may re-sit the final year examination as external candidates only after 2 but within 6 years of their graduation, provided they have been working during that period in fields related to their study. Thus they are given another chance to strive for an honours level, a practice yet untried at the University of Malaya.

In the final year examination, internal and external examiners are appointed. The question papers are prepared by the former and moderated by the latter; the answer scripts are first assessed by the internal examiners and then by the external examiners. Such evaluation by external examiners, although considered anachronistic by those who do not fully understand the system, is necessary in the early stage of a University's development. Thus, standards at least comparable to those universities where the external examiners are themselves teaching can be attained. Since the University strives to establish academic ties with other institutions, the maintenance of comparable standards will ensure recognition of our degrees and facilitate our graduates in undertaking post-graduate training or research work in foreign universities.

BUILDING TEACHING STAFF:

Building teaching staff is a difficult and onerous task. Those involved in staff selection are inclined to settle too quickly for the second best, in order to ensure appointments. Unless all appointments are made with strict adherence to high standards, the whole institution may be subject to internal decline with mediocrity being protected. The University cannot transform itself into some social club maintaining its own entry qualifications, for an institution made up wholly of amiable men is not necessarily a prestigious one; neither is it true that an institution with uncongenial fellows is a strong one. One thing is clear, however, a faction-ridden university is a declining one.

The size of the academic establishment depends upon the speed of recruitment. Teaching should not be impeded by delays in the formal system of public advertisement and soliciting appraisals from referees. Thus, traditional practices have to be changed especially in filling foundation chairs and professorial posts because such men are generally scarce. Moreover, they are known to have misgivings about less established institutions and unless they are assiduously sought out, the opportunity to build a reasonably good core of senior men may be inexorably lost.

Fortunately, through advertisement, a large number of suitably qualified academics have been recruited. While many potential applicants prefer posts with research opportunities, there are indications that our present staff enjoy the opportunity of lecturing their own course, of being useful within the academic community outside Kuala Lumpur and of developing a modest research programme of their own. This they are unable to do in an atmosphere of intense competition, characteristic of any well-known American or European university. With a total number of 175 staff members including those who have accepted offers of appointment to date, and an expected student population of about 2,000 persons by June 1973, the staff-student ratio works out to approximately one staff member for every twelve students, compared with rates regarded as ideal, ranging from 1:10 to 1:15. Given an anticipated optimum population of 10,000 students, the number of teaching staff is expected to increase to approximately 830 by 1990, excluding administrative and general staff, numbering about 1,300.

The total number of staff at any given time depends also upon the prevailing wage levels. Unless they are sufficiently attractive, university staff may suffer from inadequate salary and status not competitive with those in government and manufacturing industries. Low wage levels may also make it difficult for the university to achieve an ethnic balance in the composition of the administrative, academic, professional, technical, clerical and other supporting staff. This is because every time a Malay staff member is recruited for service, he is attracted by higher salaries elsewhere. Even the training programmes attract few Malay scholars because of greater remuneration offered by other institutions.

Although the administrative and general supporting staff tend to outnumber the academic staff, there is no suggestion that the administration controls the final judgement over university matters. On the contrary, the centre of gravity remains with the academic staff in respect of curriculum, relevancy of subject matter taught, quality of teaching, the examination system, the service functions of the university and those aspects of student life which relate to the educational process. They are also involved in the government of the university, in its decision-making processes both at the university and school levels. As research would be futile unless it is geared to local needs, I have advised the staff to relate research to the interests of this country in particular. This is because I feel that, while the Massachusetts Institute of Technology in the United States of America, being well endowed with funds and equipment can afford to indulge in research for its own sake, reality demands that this University must make a conscious choice to confine itself within the financial

limits of the funds provided by the Malaysian taxpayers. This does not suggest that its research efforts will not attain international standards. Instead, the University has to obtain its goals by means other than those traditionally well-tried in the United Kingdom or in the Americas.

The question of how to evaluate research for the promotion of staff within the established hierarchy is yet to be considered seriously. This is because it is always difficult to separate an imaginative investigator from a pedestrian investigator and inconsequential scholarship from profound scholarship. Moreover, books and papers are not the only media by which the essence of scholarship is manifested and made available to others. Genuine scholarship may be manifested through stimulating teaching, although this is difficult to evaluate. A detached attitude is hard to achieve and members of staff appear to resist direct appraisals by deans and professors, for this suggests an examination of how they conduct a class or deliver a lecture. However, until new and imaginative techniques of objective evaluations are discovered, much reliance has to be placed on subjective judgements for the present.

ADMINISTERING THE UNIVERSITY:

Administering a university is another important issue. Depending upon how this is done, the institution either provides a climate of superheated combat which results in the futile dissipation of energies and warped judgements, or a congenial setting for effective teaching and scholarly pursuits. Unfortunately, there are no standard solutions to the problems which a university faces. Solutions which are workable with one university may not be workable with another especially when it is relatively new. Besides, solutions effective in the past may not be valid today. What further complicates university management is the fact that the chief executive has to synthesise the diverse contributions of "professional non-conformists" as well as defend the institution against criticism from external influential quarters and the freedom of students and staff who espouse unpopular causes. Superficially, these issues appear unsubstantial but as many people can testify, they may on a moment's notice burst into a conflagration. The Vice-Chancellor also faces pressures from many different quarters; there are forces above him, beside him and beneath him although, there are fewer in the line of command above him. Under such circumstances courage and composure are required to balance such pressures lest acceptance of his position be made difficult.

An upper level businessman may claim that the chief executive of a university should find little difficulty in handling only a handful of staff and a few thousand students. However, it should be remembered that although the university is not an electoral institution it has to conduct its affairs in a democratic process which involves numerous decisions varying from the urgent, the important, the essential, to the trivial. The chief executive is required to bring about progress less by the sheer power of his office and more by informal, friendly and persuasive means.

The achievements of the first Vice-Chancellor depends not solely on his initiative

but also on the ability of his deans to represent him effectively at the school level and to provide the essential link between himself and the staff. Personally I have thoroughly enjoyed working with these deans and have profited from the give-and-take sessions with many staff members regarding their aspirations and requirements. As for student status, I have maintained that responsible participation be recognised as a claim to an opportunity both for educational experience and for involvement in the University's affairs. I have urged that channels be sought to permit significant student participation within the limits of attainable effectiveness. Based on the Rukun Mahasiswa devised with the concurrence of the Second Students' Council, I have exhorted students to exercise their fundamental right, which is the right to learn; in exercising this right they can expect competent instruction which will enable them to become explorers of knowledge. They may expect of their teachers the best scholarly standards and conduct in keeping with both the dignity of their profession and their proper role as intellectual guides and scholars.

By the nature of my office, I also assume the role of chief spokesman for the University, to the public on all matters. Although I uphold the right of everyone in the University to speak on general educational or administrative matters, I also maintain that he should at all times be accurate, circumspect, exercise appropriate restraint and make every effort to indicate that he is not an institutional spokesman. I have persistently emphasised these points so as to prevent staff members from spreading biases and personal prejudices.

MEETING SOCIAL RESPONSIBILITIES:

The role of the University in meeting its social responsibilities depends largely on the extent of involvement in the society which supports its enterprise. Although it is important as a paragon of academic standards, a warehouse of knowledge and a discoverer of new horizons it cannot function effectively without being affected by the structure, progress and the welfare of the society. In any case, it cannot afford to be socially blind to the far-reaching changes currently occurring in the country. Otherwise, it may find itself growing out of context with realities and face retarded growth; at best, it may be described as a national-type university or at the worst, it could be labelled as a foreign university located in Pulau Pinang. Thus, to be in line with the current trend of development and to contribute to the common good of the nation, due emphasis is laid on its social responsibilities.

In this regard, the **Centre for Policies Research** was established early this year with a view to undertaking studies designed to assist the government, local authorities and other organizations in making judicious policy decisions. Basically, this Centre is a research centre which shall recruit its own research staff as well as draw upon staff in existing schools by involving them extensively in research projects with a view to:

- (i) discovering new facts and providing studied interpretations to phenomena already observed;
- (ii) testing the validity of "standard" social, economic and cultural indicators

in the local context with the aim of refining them so that more meaningful analyses can be made on the processes of change, the goals of development and the most effective means of attaining them;

- (iii) collecting, analysing and storing social, economic and cultural data on a continuing basis so that it will be easier to monitor at any given moment the nature and direction of change in the country ; and,
- (iv) providing new opportunities for the training of local researchers, who with their familiarity with specific development issues on the local scene, may subsequently play a key role in the actual field of development planning.

It is envisaged that this Centre will also publish research papers, organize seminars and conferences to discuss policy issues and undertake commission work from public authorities. Should available research findings on a particular topic be deemed inadequate, the Centre will conduct more intensive research. In addition, it will endeavour to build up a reputation sufficient to attract government projects which would normally be assigned to committees.

In the provision of opportunities for adults who wish to extend their formal education and prepare themselves for a degree qualification, the University has organised an **off-campus programme**. This will facilitate the acquirement of a University degree by many Malaysians who for some reason or other, fail to acquire one or do not get as much of it as they can turn to advantage or as they discover, sometimes too late, that they need. Primarily for adult students in full-time employment or working in the home, the programme functions to balance the inequalities of opportunity that exist between working men and full-time university undergraduates. Essentially, it brings higher education to areas outside the campus. Since it aims at catering for those above the age of 23 years, students below this age at the time the course begins, will not be admitted as registered students unless a physical disability or other circumstances outside their control, precludes them from being admitted into an established higher education institution.

Courses are to be offered at three levels of academic study, with each level corresponding to the requirements for each of the three years of full-time academic courses. Off-campus students, however, may be required to take two years to complete each of the first two levels and a total of five or six years to complete all courses required for a degree. Each level consists of ten courses divided into two parts and students may offer not more than six of these courses initially and the other four courses as part two, the following year.

For the first and second level courses they are required to undertake self home study and will receive at intervals, only such materials as the syllabus and the synopses for each of the courses attended, including the reading list. These are lists of books for background information as well as information pertaining to topics relevant to each course. The first two levels will each include a vacation course of intensive lectures, tutorials and seminars conducted by the University staff and part-time lecturers for a period of three

to four weeks during the University vacation in December. As this vacation course is an integral part of the programme, besides being an intensive period of study in a different setting, it is therefore compulsory and alternative arrangements are not possible.

For the third level courses however, students are required to be full-time on campus. For the present, this obligation cannot be waived. While the disciplines best suited for off-campus education are the humanities and social sciences, first level courses in physics and mathematics will be available to off-campus students commencing this June whilst courses in biological and chemical sciences may be introduced in June 1974.

The qualification for admission is the Higher School Certificate or equivalent. Should applications for admission exceed available places, certain considerations apply:

- (i) Whether the candidates are sufficiently prepared to benefit from and succeed in their proposed study for the degree.
- (ii) Whether there is a particular need for improved educational standards for the candidates or intended occupational group.
- (iii) Whether adequate "tutorial" help can be obtained in the area where they live.

All students admitted into the off-campus programme for the first level and later for the second level courses are expected to be fully occupied, either through employment or in the home. Self study is important and to do this effectively, certain prerequisites are necessary:

- (i) Zeal to study with limited formal lectures and academic work; without strong motivation no student can hope to succeed.
- (ii) Adequate time for study; a minimum of ten hours of study per week for several months each year is essential. This requires very careful planning of time utilisation.
- (iii) Place of study; conditions conducive to study are required. The town library may be suitable but cannot wholly replace facilities for private study at home.

At a later stage when the situation permits and sufficient staff are available, considerations will be given to mailing not only library books but also written course materials, problem sheets and essay titles, notes and in some cases, taped lectures; written answers will be invited, evaluated and returned, thereby maintaining a continuous assessment of academic progress during the period of study. Further, with the agreement of the State Governments of Pahang, Sabah and Sarawak, study centres may be established in Kuantan, Kota Kinabalu and Kuching to facilitate students to meet appointed residential tutors and visiting lecturers. It is also envisaged that these centres will provide facilities for receiving academic programmes from Television and Radio Malaysia.

In promoting the off-campus programme, I perceive a mounting need to provide ambitious adults with greater access to acquire University degrees, especially those who develop such ambitions in later life and those who need requalification for a change of career. The off-campus programme has confirmed the increasing demand for degrees as attested by the overwhelming number of applications it receives annually. Moreover, because knowledge is expanding rapidly it is obvious that much of what a student learns today will be irrelevant by the time he becomes a mature adult. As adult education at the university level differs markedly in scope and context from the education of young undergraduates, this University will pioneer the attempt to operate full-time degree courses only for adults above the age of 23 years. The education of young undergraduates will be relegated to Universiti Kebangsaan, Universiti Pertanian, Institut Teknologi Kebangsaan and Institut Teknologi MARA which have the required enthusiasm to make available a wide spectrum of courses to meet their needs.

Besides the off-campus education programme, the University has also instituted a **senior fellowship scheme** for retired men and women with at least 15 to 20 years of active professional experience, in such fields as the pure and applied sciences, classroom teaching at all levels, public administration, politics, law, business and industry, as well as the creative and performing arts. To attract a wide cross-section of talents, the term "professional" is liberally interpreted to include also retired Malaysians who worked as journalists, artists, music composers, military and police officers, politicians, factory managers and many others who can contribute to the manual of scholarship. This scheme was started in early 1971 to tap the expertise of many retired Malaysians. These "retired professionals" who are still mentally alert are invited to set their experiences and knowledge in writing, to be edited by the University, published under their authorship and made available as reading material for both undergraduates and the public. This scheme will likely result in a corpus of literary Malaysian writings which the University Library will stock for succeeding generations of students and scholars.

On appointment, Senior Fellows (*or Ahlicipta*) will receive a reasonable honorarium per month for an academic session of up to twelve months. They will be provided with working space and with the necessary facilities required for such a writing project. They are also required to participate in tutorial classes and seminar groups relevant to their research so that practical experience may be evaluated against theoretical ideas of students and staff. Whenever feasible, they will be encouraged to undertake community work so that the University may be further integrated with the public. It is hoped later, to extend this scheme to include younger professionals with at least ten years of service who, preferring the intellectual stimulus of being in the University, may take a year off from their jobs to chronicle their experiences.

In order that it can be a further effective agent of change, the University also gears itself to three other positive measures:

- (i) Encouraging students, on satisfactorily completing their second year of study, to undertake practical experience in industries, agricultural development,

community integration and other similar services. Under this arrangement, the students will be placed for about six weeks in different organisations related to their academic interests. Both parties involved will benefit, especially the students whose personal worth upon graduation will be further enhanced by practical experience;

- (ii) Encouraging academic staff to use their sabbatical leave or other leave available by participating in industries, business organisations and government departments. This is because practical experience is as important as academic experience and their teaching can be further enriched through practical knowledge. By their participation too they help improve the relationship of the University with the private and public sectors and through their communication with potential employers emphasise the marketability of their graduates;
- (iii) Extending the library service to both staff and students of the Malayan Teachers' Training College and SEAMEO — Regional Centre for Education in Science and Mathematics. Business executives, professional men, bona fide research workers, students for external professional and academic examinations are also welcome to use the library facilities.

CAMPUS LIVING:

Another distinctive feature of the university is its **Desasiswa** system whereby accommodation is provided in flats and dwelling units at reasonable rent. Accommodation units with single and double rooms, for single and married students, including cooking facilities are available. Each Desasiswa also contains certain common facilities such as lounges, a television room, a meeting room and other amenities for study and recreation, for use by both residents and non-residents. This avoids "academic apartheid" between hostelites and non-hostelites. Departing from the traditional residential college system however, food is not provided. Instead, several cafeterias are established at strategic locations on campus and payment for food is by cash.

Three desasiswas have been planned along this line and when completed they should accommodate no less than 1,650 students or about 59% of the total student population by June 1975. The desasiswas are different from each other but together they represent separate forms of urban living, ranging from living in terraced units to living in flats. Thus, apart from the formal teaching provided, the University also encourages students to be independent and to experience living in a campus which is not totally removed from realities. By going urban it hopes to provide the variety and spirit characteristic of urban living.

Those unable to obtain accommodation on campus are encouraged to live in private homes which provide the homely atmosphere so important to outstation students.

Moreover, by such arrangements students are encouraged to live with families ethnically different from themselves, thereby promoting race relations. Should dietary and other problems arise, the University attempts to resolve them by encouraging understanding and goodwill, necessary for the furtherance of purposes and values important to this country.

Campus living does not merely involve living in a Desasiswa. It also depends on the environment which encompasses it. Because of limited space and the interdisciplinary nature of studies in the University, a compact physical development has been adopted. Existing buildings are renovated and integrated with new buildings to create an overall effect of a campus capable of unified growth. This is essential to preserve a strong sense of unity and to prevent separate buildings from becoming self-sufficient and therefore, isolated with their private libraries and common rooms. Besides, with this compact plan even the 10,000 students anticipated by 1990 can be accommodated without radically changing the coherent pattern of development in the campus. As a physical planner, I believe that a concentration of teaching, residential and social buildings means that reading rooms and common rooms, squash court and cafeterias, bookshop, bank and petrol station need not proliferate but should be used to the maximum. This also reduces the cost of building roads and providing essential services which need not be extended to every part of the campus. Thus, the most significant aspect about the University plan is that it makes intensive, maximum use of valuable urban land.

FUTURE PROSPECTS:

Regarding its future prospects, the University is not unmindful of the need for renewal and for continuous assessment of its qualitative condition. In fact, the Academic Planning Board has approved that for a start, an evaluation be conducted with a view to examining the progress that the University has achieved so far, so that informed, judicious decisions regarding the priorities and direction of its future programmes may be made. Because of the importance of the exercise and the ramifications it generates on the whole system of higher education in Malaysia, may I propose that it be undertaken by the higher Education Advisory Council or by a select group drawn from among its members. Of the many relevant areas, the following may provide the necessary framework:

- (i) **The Governing Board:** When is it necessary to a developing university? When formed, is it strong, balanced, active? Is it an inert body, restricting itself to routine operations? Does its membership contain at least a nucleus of influential members appropriately sophisticated and concerned with Higher education and the nature of a university?
- (ii) **The Staff:** Gauged by other institutions of its class has the staff exceptional strength to serve as pace-setters? Which are the weak ones that will require special attention? Is morale good, as attested by the institution's holding power of its staff? Are the schools headed by able persons? Does effective machinery exist to assure staff participation in the formation of academic policy?

- (iii) **Academic Programme:** Are the curricula a clear reflection of institutional purpose? Are they abreast of needs which they should serve? Do they show evidence of past planning and periodic revision?
- (iv) **Finance:** Do sufficient funds flow into the university to permit a balanced budget without denying basic support to a strong academic programme? Is the organization for fund-raising effective, and does it function without the constant involvement of the Vice-Chancellor?
- (v) **The Administration:** Is the administrative structure sound and appropriate to the size and purposes of the institution? Are the deans leaders in their own rights? Does the central administrative staff have its quota of creative minds who are able to share much of the Vice-Chancellor's load? Do disappointed professorial aspirants, if any, on campus, evince loyalty to the university and a willingness to work together well in harness?
- (vi) **Physical Plant and Equipment:** Are buildings well maintained and is equipment modern and adequate? Has the physical development of the campus proceeded in accord with long-range plans?
- (vii) **Public Relations:** Has the institution cultivated the active interest and support of its graduates, the townspeople, patrons, and citizens at large? Has the conduct of public relations relied on excessive participation by the Vice-Chancellor? Has the public relations programme concentrated on the public image of the Vice-Chancellor at the expense of the institution?

Finally, the Higher Education Advisory Council should also provide a valuable service to this University in particular and other universities in general if it could deliberate on the distinction to be drawn between the necessary decisions that the government must reserve unto itself and those that universities in this country should take. Whatever it is worth, my opinion is that the government should reserve the right to make decisions on such matters as: determining the total financial resources of each university; specifying the total number of full-time students which would require a certain sum of money to support; determining academic staff salaries; approving the creation of new universities and reserving the right of an informal mechanism commissioned to keep in touch with all developments in universities in Malaysia. On the other hand the universities should be granted the prerogative of deciding whom to admit and whom to appoint on the staff, of devising new fields of study, of deciding how to conduct teaching and research and how to deploy their budgets within the broad framework of guidance provided.

CONCLUDING REMARKS:

In conclusion, it is to be pointed out that this presentation does not exhaust all the issues that the University is expected to encounter in the next few years. There are yet other issues upon which further thought has to be given; suffice to say that arising from

these issues it is possible to emphasise the following points:—

- (i) Quality education is central to the system of higher education in the country;
- (ii) Universities are expected to be complementary to one another and the areas of thrust providing a basis of excellence for each of the individual universities should be non-duplicative in approach;
- (iii) Given the national language policy, with the English language being accorded its due place of importance in this country, each university should be entrusted with implementing their use in a manner that is professionally right and educationally sound;
- (iv) The practice of staff selection has to be flexible in the initial years of development of the university so that teaching is not impaired;
- (v) As managing a university is a crucial enterprise, requiring unusual skill and practices, the headships of new universities should perhaps be confined only to men with the necessary talents;
- (vi) Although teaching and research functions are important, the University cannot afford to be impervious to the needs of society;
- (vii) The University should not be unmindful of renewal and evaluation.