

〈招請學術論文〉

A Search for Renovation of University Management
for Educational Development in Korea

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**I. Necessity of Rationalization in
Higher Education**

An explosive increase in the number of institutions after World War II was not peculiar to Korea alone but common to the whole world.¹⁾ Especially in the sixties, children born during the population explosion just after the Second World War reached the age proper for higher education. The advent of the new industrial society created a huge demand for highly-educated manpower, and there also emerged a new educational climate in which it was hoped whoever desired could share in the benefits of higher education. In the meantime the education authorities of the world have endeavored to solve the problems caused by these factors in their own ways.

Perhaps future educational specialists will face three distinct phases in the development of the world's higher education during the past thirty years from the nineteen fifties through

the eighties. They are expansion in numbers, reform of institutions of higher education, and innovation of the system management of higher education in general.

The fifties and the sixties were characterized by the expansion in number, and the sixties and the seventies were the periods in which new institutions of higher learning were established and in some countries attempts were made to improve quality and methods of teaching and also the structure and management system of institutions. In the seventies and eighties a serious examination of the system of higher education started as a common task throughout the world. It was during these last two decades that the two reports on higher education were published by the Robbins Committee²⁾ in England and the Carnegie Council³⁾ in America: both of them endeavored to examine thoroughly the problems that arose in their own countries and to present blueprints for future higher education. In Korea also there was a move in the seventies towards the innovation of higher

education. In 1972 the "International Symposium on the Innovation of Higher Education" was held in Seoul, which brought about full-fledged reform of higher education in Korea.^{4,5)} However, it is disappointing that nearly all those who are involved in higher education have shown little or no interest in the reform of university management which should have been carried out in parallel with the educational innovation.

It is ironical that universities are suspicious of their own innovation, especially that of their own administrative structure, as they are given the role of initiating the intellectual and scientific reform of the community and the nation. In this respect it is remarkable that in the sixties and seventies some of the universities in the United States carried out the reformation of their administrative systems through the utilization of modern management techniques, the establishment of the "office of institutional research," and the active use of computers in university administration. It should be especially noted that computers are not simply used as data banks, but also fully utilized in the implementation of a very sophisticated system called "The Planning, Programming and Budgeting System(PPBS)".

The introduction of management science in Korean university administration has only a short history, and in addition, university administration has been based more on legalism than rationalism owing to the increasing control of the Government over higher education. The critical situation that the Korean peninsula is divided into two parts made it inevitable for the Government to intervene in the affairs of higher education for national security. In addition the Government sought to curb irregularities in university education and regarded higher education as part of the economic development plan. Governmental intervention also resulted from its view that

universities should provide quality education and have social accountability for their financial resources. Government control over the finances of private colleges and universities which comprise 78.6% seems to have weakened their internal administration and has had an adverse effect on the progress of higher education.

The difficulties of surveying all aspects of university administration arise from its far more complicated structural characteristics and far wider range of activities than industrial or other forms of organization. As pointed out above, institutions of higher education in Korea have undergone a rapid expansion in recent years. There is also an increasing social demand for the college graduates to further propel our national development. Under such circumstances, the rational management of institutions and the heightened efficiency are urgently required. In this report Korean university administration will be examined in its international perspective based on the experience acquired since the author became the first President of Ulsan Institute of Technology in 1970. Important problems concerning institutional management such as the setting-up of educational goals, the organization of institutions, the research of institutional systems, finance, etc. will be examined, and a few suggestions will be given thereafter.

II. Problems in the Management of Korean Universities

1. Academic Programs of University

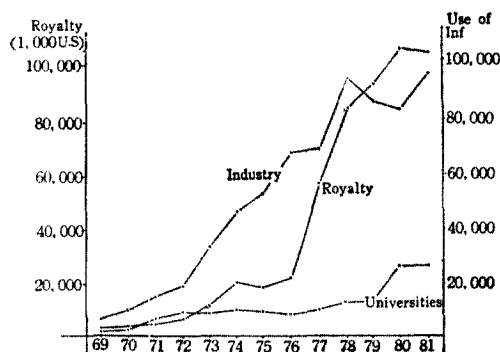
1) Pursuit of Excellence

The pursuit of excellence is fundamental to the nature of university education.⁶⁾ One of the major functions of university administration is to inform academic circles and the general public of the educational excellence of their university. In carrying out the mission of the

college or university, the first job of the top management of higher education is to help win, if possible, international recognition for the qualities of their specific educational programs and departments. Such recognition will only come through high-quality research activities and excellent education, in the departments involved.⁷⁾

Following is the current situation of researches carried out in Korean colleges and universities. Figure 1 shows the amount of academic and technical information disseminated to industry from Korea Institute for Industrial Economics and Technology (KIET). It is an indicator, though indirectly, of the on-going research activities in industry. The year 1973 saw eighty-three per cent increase from the previous year in the amount of information requested by industry. From that year on, there has been a steady increase. Four years later, in 1977, as Figure 1 illustrates, there was one hundred and seventy-three per cent increase from the previous year in the amount of the royalties paid for the import of foreign technology.

Fig. 1. Increase in Royalties for Foreign Technology and Dissemination of Technical Information from KIET



Source: KIET. Annual Reports of KIET.
1969-81.

On the other hand, it is only from 1980 onwards that we can see a relatively large increase in the amount of information supplied by KIET to colleges and universities.

From 1977 onward, when there was a sharp surge in the royalties paid for foreign technology, industry began to invest significant amounts of money in research, but no noticeable increases can be seen in colleges and universities for the same period of time.

However, a total of 441.07 million dollars in foreign loans (excluding foreign aid) invested in educational areas helped greatly to stimulate full-scale research in some universities. This can be seen clearly from the fact that the Korean science papers published in international journals have increased from 50 papers in 1974 to almost close to 300 in 1981. This means that research activities in Korean colleges and universities are now beginning to gain international recognition. Because of its universal character, knowledge is transnational, and academic circles are composed of scholars from all over the world. In many ways, Korea is striving hard to become one of the advanced nations. Therefore, it is time to consider seriously how we can reach the international level in our academic endeavors.

Secondly, the top management of higher education should ensure that students of each academic program, whether undergraduate or post-graduate, be highly valued in industry and in the academic marketplace. Evaluations of the quality of research are relatively easy, but it is rather difficult to evaluate the quality of the curriculum or teaching methods of an institution. Also there are no fixed sets of standards by which to make comparisons among the institutions. Since the frontier of knowledge is always changing, corresponding readjustments of the curriculum, developments of academic programs and experiments with new teaching methods can help the reputations

of particular departments in achieving academic excellence,—even though indirectly. For the departmental and individual faculty efforts to update academic programs to accommodate new developments in the field, university administration should give full support by providing sufficient funds and time.

Evaluations of academic excellence always operate with timelags. For the specialists, these are quite short, but they are relatively longer among peers in the discipline as a whole. From his 15 years of experience, the author has come to keenly realize that it takes a long time for the academic reputation of an institution to percolate to the general public. Because of these delays, an institution is both the beneficiary and the victim of its own reputation. It is very unfortunate that besides for its teaching, research and enthusiasm, the excellence of an institution in Korea is determined to a large measure by such extraneous factors as its status(public, national or private), its size(college or university) and its location(capital city or other areas). Today in Korea, the ranks of institutions are determined by the applicants' scores in the state-run college entrance examination. Not only should such rankings be abandoned, but also other problems caused by the current state-run college entrance examination should be solved as soon as possible.

The rapid expansion of Korean Universities has caused a number of problems in the educational efficiency and rational administration. One of the problems facing the academic administration in Korea concerns the status of an institution that is, whether it is a university or a college. To be more specific, there is the prevalent misconception in Korea that better universities have a greater number of students and departments.

On the other hand, such small-size institutions as Handel Shoskolan, Economische Hogeschool in the Netherlands, and L'Ecole Polytechnique

and other grands ecoles of France are among the most prestigious ones in Western Europe, training and supplying the top-quality graduates required by their respective society.⁹⁾ The point is that academic excellence has nothing to do with the size of an institution, but there seems to be no place for prestigious smaller colleges in Korea.

2) Determination of Academic Programs

Sixty-seven percent of the Presidents of Korean Universities and colleges have Ph. Ds in their own fields and 89% of them have previous teaching experience in higher education.¹⁰⁾ In this respect, it is evident that the top management of the national, public and private universities and colleges have the primary responsibility for the determination of academic programs. In case institutions are small, the president himself must shoulder all responsibility. But as the institutions grow, the duty of the top management shifts to a specialized and cooperative team of the top management. But strong leadership and influence of the president are still indispensable in times of reform or financial retrenchment.

According to Schmidlein,¹¹⁾ there are two different types of decision-making practised in higher education: one is the incremental/remedial type which has the philosophical background of free market and political process, and the other is the comprehensive/prescriptive type which incorporates the management techniques in the decision-making process on the assumption that the goals and results of higher education can be quantified. But depending on the atmosphere of each university, these two will be used in combination in the management of educational programs.

3) Development of Academic Programs

The recent development of science and technology rapidly obsolesces old technology and new frontiers of knowledge require new aca-

ademic programs which can accommodate them. In introducing new programs, emphasis should be placed on the systematic cultivation of both the basics of current knowledge and technology, and basic knowledge or way of thinking essential for future development. The rapid growth in the use of computers during the last two decades had a tremendous impact on the whole world. Anticipating that the impact from microelectronics would widely affect our society, Ulsan Institute of Technology has for the last 15 years maintained efforts to constantly meet this demand in the following stages:

In 1970, the opening year of the Institute, Computer Programming was offered as a required course for all students.

In 1974, Computer Science was offered as a major field of study within the Department of Electric and Electronic Engineering and software oriented education began.

In 1978, separated from the Department of Electric and Electronic Engineering, Computer Science was established as an independent department.

In 1984, Computer Engineering was set up as a new major field of study within the Department of Electric and Electronic Engineering and hardware oriented education started.

In 1985, Production Engineering is to be added as a new major field of study within the Department of Mechanical Engineering. The use of computers and automation in production technology will be taught.

It is a common occurrence that as the domain of a discipline broadens, the goals and subject matter of a course change a great deal from year to year. Since the academic programs have future oriented characteristics, the top management's vision of the future is the determining factor to the excellence of the institution's academic programs.

The dynamic characteristics of academic programs should ensure that they be able to

cope with the changing society. Therefore, periodical reassessments of academic programs are quite necessary for the creation and maintenance of the atmosphere conducive to continuous educational reforms, which are the very essence of higher education. Through the last 15 years, Ulsan Institute of Technology has carried out the annual reevaluation of its entire curricula. Though this full-scale reassessment of curricula takes considerable amounts of time and energy, not only do all the faculty of the Institute participate in the process, but also each staff member acquires a clear understanding of his own department and department heads can grasp the whole picture of the respective places of their departments within the Institute. The significance lies in the process itself, in which staff members learn from each other and new faculty members are introduced to the workings of the Institute. The author is convinced that such a periodical reassessment of the education programs is one of the best ways to stimulate and sustain vitality among staff and also to prevent possible academic stagnation.

4) Manpower Planning and Academic Programs

There are numerous variables to consider in the accurate assessment of a nation's supply and demand of quality manpower. Consequently, it is very difficult to predict the long-term supply and demand of manpower. Broadly speaking, the supply of manpower for industries in Korea seems to be affected by the following two transitional factors.^{1,2)}

First, the technological innovations and improvements that are now in progress in industries have an immediate influence on the supply and demand of manpower. Examining the history of science and technology, we realize that unlike in the past, new forms of technology in the modern world are direct and

far-reaching in their influence and we observe the established social order adjust itself to these developments. It is quite natural that with the introduction of new technology, the demand for manpower needed in industries should change.

Second, Korea is a developing country currently undergoing the transition from an agricultural to an industrial economy, which is also decisive in the supply and demand of manpower.

These two factors, reinforcing each other, continuously affect the overall supply and demand of industrial manpower. Therefore, unlike in the industrially advanced countries, there is a great difficulty in forming an accurate assessment of the supply and demand of manpower in the developing nations. Also these two factors have a considerable significance in the development of academic programs. This is where the top managements' insight into the future is crucial.

In the seventies, the major industrial powers such as the U.S., Japan, and some European nations, experienced an over-all decline in employment for which two oil crises during the same period may not be the only explanation.

It appears to be true that mechanization and automation in industry are responsible for a gradual shift both in the amount of production and in the employment structure.

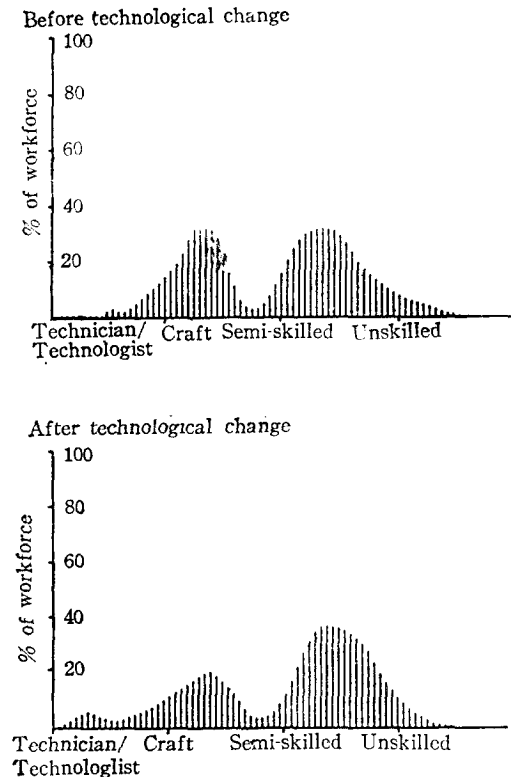
In other words the "jobless growth"¹³⁾ now observed in Korean agriculture is a fait accompli in the West where machinery was introduced earlier. Technological innovation has partially forced the demand for manpower to transfer from the once labour-intensive primary and secondary to the tertiary industries. As this trend is certain to follow eventually in Korea it must be carefully considered in future assessment of the supply and demand of high quality manpower.

Not only do technological innovations widen

the gap between the technology that industry requires and the competence of manpower but they also change the nature and quality of the work.

As the industries in general become more sophisticated, the demand for the average skilled workers decreases, while the demand increases for top-quality manpower (i.e., college graduates). This tendency can be seen clearly in various sectors of the industry. Fig. (2) shows the change in the distribution of the technical manpower of the textile industry in Britain before and after the industrial innovations.

Fig. 2. Skill Distribution in the Textile Industry in U.K.



Source: John Fyfe, *Technology Choice and the Future of work*, BA Symposium, Nov. 1978.

As Fig. 2 illustrates, the demand for technician-technologists, and semi-skilled or unskilled workers registered an increase, while the demand for craftsmen was on the decline. With the technological innovations, the demand for manpower did not undergo changes at an identical ratio across the entire spectrum, or in levels of skill. What is note-worthy here is that there occurred changes among the different levels of manpower. This fact, quite important in the assessment of the supply and demand of quality manpower (i. e., college graduates), didn't seem to have been taken into consideration.

As seen above, numerous factors directly influence the demand of quality manpower. Therefore, to cope with the coming era of the "information society" the academic programs of higher education should focus on the basic subjects, and stimulate research activities in undergraduate courses to develop creativity of the students.¹⁴⁾ Also, the ultimate goal of higher education is to help the students to develop their potentials.¹⁵⁾ Therefore, the academic programs in universities should be considered as the starting point and preparatory stage of life-long education. It is desirable to add some elements of university-industry cooperation to the undergraduate studies and provide the students with the opportunity to grasp the workings of industries and ultimately of society itself.¹⁶⁾

3. Organization of University

1) Flexibility of University Organization

Historically, universities have been defined as institutions dedicated to education. However, as their functions grow complex, and their sizes expand, they can be redefined in various ways. Furthermore, they are seen from many different points of view, depending on the cultural and social contexts of their nations. In the U.S.,¹⁷⁾ they are usually recognized as

institutions, enterprises or agencies, while in Great Britain¹⁸⁾ there is the tendency to view them as institutions, organizations or traditionally as "communities of scholars". Without having any direct contacts with the government organizations, universities in U.K. can secure sufficient recurrent expenditure and capital funding through the University Grant Committees (UGC) which are run by scholar-professors.¹⁹⁾

In the U.S., however, college and university presidents have to assume the paramount responsibility for finance. The presidents of state universities in particular have to wrestle with their state governments for funds unlike the vice-chancellors of British universities.

Such differences in tradition are clearly reflected in the characteristics of the university administration of the U. S. and Western Europe. In Europe, the university administrators are totally controlled by the faculty members²⁰⁾ and therefore their administrative power is more limited than those in the U. S. university. In the U. S., most of the administrative affairs involving admission and student affairs are handled by the professional administrators. In Europe, however, all of these affairs are carried out under the supervision of professors. University administration in Korea can be said to be basically similar to that of Europe in view of the fact that Korean professors are higher in the power structure than administrators.

After World War II, the expansion of higher education, with the tremendous surge in students and financial investment, not only increased the amount of administrative affairs, but also changed their nature. Realizing that the organizational structures of their administrations were not necessarily well-suited for the expansion of students and finances, even the conservative European colleges and universities began their review as early as the sixties. As a result, the initial administrative measures

they took were, to cite a few examples,²⁰⁾ to consolidate the power of presidents(France and Germany), to extend the terms of service of the rectors (the Netherlands, four years), and to reinforce the organizations of administration (Great Britain). In the same periods the U.S. established the office of institutional research, in an attempt to introduce the techniques of management science on a full scale.

Universities are organizations with dynamic characteristics of adjusting themselves to the changing environment. Flexibility of administrative procedures is quite indispensable for the successful and efficient achievement of the goals of universities. Therefore, it is quite natural that universities should undergo periodic examinations of their organizations and functions. It should be remarked that in Korea there have been few changes in the organizations and structures of universities until now, though educational reforms are now firmly established despite some political unrest in the past decade. This is partly due to the Government Organization Act regulating the organization of national universities. Private colleges and universities are also to blame for their undersirable practice of blind imitation of the organization of national universities. Therefore, the present organizations and functions of our colleges and universities should be thoroughly re-examined not only to adjust themselves to the changing society, but also to prepare for adoption of management science techniques in their administration.

2) Head of Department: His Role and Term of Office

The most noticeable difference between Korean institutions and those of other nations is in the term of service of heads of departments. In spite of the fact that departments play an important role in securing the academic excellence of a university, heads of departments

in Korean universities hold office for only two years.

With such a short term of office they can hardly be expected to prove their capacity to the full by developing and carrying out mid-or long-term plans. Moreover, these days leading members of academic staff do not want to take the office on account of agitation on the campus and the increase in academic affairs brought about by the increase of students. Therefore, the office is taken in turn almost mechanically and the head cannot function effectively in the process of establishing the goals of education and research for his department. Under such a system the youngest in the department, maybe an assistant professor, could be in charge.

By contrast the authority of the head of department in the U.K. is very powerful. His term is until retirement and he holds full authority in budget and staff appointments.²¹⁾ While he stays in office for twenty or thirty years, he can lead his department with confidence. Thus the department will have characteristics which can not be found in other universities. The hierarchical structure of organization in British universities shows that heads of departments with life tenure are under the Vice-Chancellor who also has a life tenure of office and deans of faculties are in-between, their offices being taken almost by turns after a given period. Thus heads of departments play a key role in the universities of the U.K.

The Japanese lecture group²²⁾ can be regarded as an organization akin to the department in view of its position in its term of office and the organizations within the department. In the Japanese national universities there are cell-like units called "lecture group" within the department. The lecture group has a pyramid structure with one professor at the top and one assistant professor and one assistant in departments of humanities, and two in science

and technology under him. The professor is an authority in his major field which differs from that of other professors in the department. They are all independent.

The professor at the top of the pyramid, who has a life tenure like heads of departments in the U.K., usually stays in office for twenty or thirty years. The lecture group plays a key role in universities, and has certainly helped national universities in Japan to attain today's reputation.

In this respect we should see clearly that there are certain defects in the system of heads of departments in Korean universities. As a remedy it may be suggested that a dedicated leader should be appointed to be head of department for a term of at least four years and that he should be given all the possible systematic and administrative postulates needed to carry out his duties, so that the post can be established on sounder lines. It follows that if heads of departments have a four-year term of office, so also should deans in universities.

The head of a department in a small college should be able to provide advice and suggestions about academic programs as requested by the president. In a university deans and department heads should form a team to give counsel to the president on academic programs. This should then enable universities to accomplish future-oriented goals and effective academic programs.

From the author's experience gained in the establishment and management of Ulsan Institute of Technology it has been clearly demonstrated that longer terms of office for Heads of Departments have been beneficial to the Departments, a stabilizing factor and of greater value in program planning by the management.

3) Establishment of New Organization

The total amount of 410 million U.S. dollars in foreign loans has been introduced for

educational needs during the period from 1969 up to 1982. In view of the size of the Korean economy during the period it was not a small amount, so that there has been a considerable expansion of administrative affairs. From first-hand knowledge the author gathered while visiting various colleges and universities in 1983 as the leader of the Educational Loan Projects Evaluation Study Team, it was found that a temporary organization called Equipment Election Committee usually took charge of the selection of equipment while the procurement of equipment was handled by the offices of general affairs and accounting, and still other organizations undertook the administration after the installation of equipment. In such a tripartite system it is evident that the whole process of preparation, introduction, management and post-facto maintenance lacks consistency. To solve this problem every college or university needs to establish an independent organization for the integrated management of educational facilities.

In the case of the Ulsan Institute of Technology(UIT), the organization in charge of the planning and management of educational facilities was established a year after its foundation and developed in the following three stages:

(1) Technical Cooperation Section(from 1971 to 1975) in charge of the affairs concerning the Korea-British Agreement and the management of equipment donated by the British Government.

(2) Planning Office(1976—1977) in charge of the general planning affairs and the management of equipment both donated and purchased with foreign loans.

(3) Office of Laboratory Management²³⁾(1976—to the present) in charge of the lab experiments and the introduction and management of equipment purchased with domestic funds and foreign loans.

The office of Laboratory Management which has operated for the past six years has made considerable contributions to the rational management of laboratories in UIT. It may well be said that the Office of Laboratory Management in UIT is a successful case of newly-established organizations.

The decisive factors of its success can be explained as its gradual expansion in its activities, proper timing, and continuous persuasion of the faculty members, March²⁴ said, "The establishment of an organization creates a new environment at least in part". The important point in this context is that the establishment of the Technical Cooperation Section must have created an environment suitable for the foundation of the Office of Laboratory Management. Of course, such circumstances cannot be created easily in a university with a long tradition, whereas in the case of the UIT a favorable environment existed for a new organization as there was no resistance against innovations.

4. Institutional Research and Computerization of Administration

1) Institutional Research in University

Institutional research, a term relatively unfamiliar in Korea except to a few specialists, stemmed in the U.S. from the attempts to apply recent techniques of management to the academic administration. Such experiences as "the application of the techniques of management to academic institution" make it rather difficult to give a precise definition of institutional research. For the moment let it be assumed that the basic aim of the institutional research is to analyse university management and provide enough information which can serve as the primary basis for decision making. According to Rourke and Brooks,²⁵ in 1955 only ten U.S. universities had offices of institutional research as part of the formal

organization. A decade later, however, as many as one hundred and fifteen colleges and universities had the offices. In view of such development, we can assume it was in the sixties that universities in the U.S. started serious reform of their administrative and managerial systems. More or less full scale introduction of computers at the universities and colleges in the U.S. coincide with this period. Undoubtedly, larger universities had a greater need to establish the offices of institutional research. In fact, during this period 20% of the colleges with less than two thousand students, 52% of the institutions with students ranging from two to ten thousand and 72% of the universities with more than ten thousand students already had offices of institutional research or appointed staff for it. But since academic institutions, unlike other complex bureaucratic organizations, were unable to avoid division and competition, some cases arose with the establishment of the new office irritating existing internal bodies initially.

However, now they seem to have firmly established their position as an integral part of the organization of universities. Of course, even before the offices of institutional research became a formal part of the university organization, a great number of colleges and universities carried out some form of institutional research in their annual preparation of budget, planning of the educational facilities and the analysis of the information concerning the newly enrolled students.

Every form of planning and policy-making requires information which can be gathered from official reports, frequent inspections, informal contacts, and personal experience, as well as from value judgment. All types of information systems aim to provide accurate information at the right time. An information system for management is based upon the concept of the data pyramid. The base of the

pyramid is composed of certain units of data. At the next level, control data can be gathered through the analyses of the basic data, and management data at the top of the pyramid. In this respect, institutional research is, in essence, a type of information system that provides necessary information for the decision-making and control of the academic institutions through the analyses of their management processes.

There is a common misconception that the most important element involved in information systems is the computer, but in reality the human factor involved in the collection and analyses of information is of paramount importance.

The difficulty is that participating administrative staff must be not only reasonably well informed on higher education, to understand the problems involved, but also, have some knowledge of computers, accounting, buildings, maintenance, etc., apart from data supplied through the system.

This presents the greatest difficulty in reforming the university management system in Korea. The administrative reform or the rationalization of institutional management is not finalised with the establishment of new formal organizations and the installation of powerful computers. Rather it requires continued efforts to train key personnel. Unlike the case of American universities, supported by highly specialized administrative staff, the primary task of the reform here is how to train administrative personnel, to improve their quality and specialization.

2) Use of Computers in University Administration

The rationalization of university management may be obtained through research and analysis in such new organizations as the offices of institutional research. Research in this field as yet untried in Korea, was actively under-

taken in America as early as the sixties, and is now firmly established in university management. The use of computers in administration is another area adopted in America almost simultaneously with institutional research. A survey carried out in 1962 shows that more computers were used in those offices than in any other administrative organizations, indicating the close correlation between computers and institutional research.²⁶⁾

According to Rourke and Brooks, in 1962 about 53% of American universities were already using computers frequently in such academic affairs as registration, academic records, other student records and admission and in the areas of accounting such as general accounting, salaries and wages, equipment lists, and budget preparation. Recently computers are being used in almost every phase of university administration.

Concerning the administrative use of computers the situation in Korea is quite different from that in the United States. In 1984, only 28 out of 99 universities in Korea used the computer file containing the scores of the state-run college entrance examination for the selection of new students, indicating that only less than 30% of the total Korean four-year colleges and universities are now using computers in administration. It should be a matter of concern that computerization in university administration has not kept abreast of its successful general use in other parts of society.

3) Suggestions

Organizations for institutional research can be established in various ways and we might follow the example of the United States, in setting up offices of institutional research. Fielden²⁷⁾ in Britain proposes the establishment of what is called "Office of Management Information." According to him, in case a university has less than 5,000 students, the director of the computer center may head the

office, whereas in a larger institution the computer center may be under the control of the head of the office. However, if institutional research is intended to include planning, the type of planning office fairly common now in Korean universities will be the most suitable organization to incorporate it.

Once the type of organization is decided, the first thing to do is to establish an operational data bank collecting, arranging, and adjusting the basic data necessary for institutional research. In so doing, the gradual computerization of administration will follow and the problem will now be the training of personnel.

The keyboard is the interface between man and computer. Unlike some Western nations, we still have only a limited use of machines in office work as well as in our daily life. Therefore, the keyboard is the first obstacle to the use of computers. And it is not easy to adjust their way of thinking to the administrative use of computers. Training of office workers is the first step toward the efficient use of scientific methods and computers in university administration and may well take some time.

The exchange of information among universities is essential for the efficient management of information systems. The Korean Council for University Education(KCUE) is known to have begun the collection and dissemination of the primary data necessary for university administration. However, it will be desirable for the Council to participate actively in the utilization of management information system for university management. Since modern management science is not actively applied in university management, it is suggested that the Council may finance the research projects relevant to the use of scientific management techniques in university administration. It is also suggested that the KCUE may serve as a data bank of the management information

system for member universities. Until a central organization is created in Korea for the management information system for higher education, it seems to be a reasonable solution that the Council serve as an alternative to it. This seems to be the very area in which the American Association of State Colleges and Universities can extend substantial assistance to its Korean counterpart.

5. University Finances

1) Korean Universities and PPBS

In recent years, some Korean specialists in education and educational finance have begun to show an interest in Planning, Programming and Budgeting System(PPBS).²⁸⁾ PPBS is basically a budgeting system that can help the government or a corporation to achieve its goals most efficiently through the Program Budget and Cost-Benefit Analysis.²⁹⁾

PPBS is composed of the following three conceptual elements: first, long-term plans ranging from 5 to 15 years(Planning), second, choice of the best course ranging from one to five years as part of the long-term plan (Programming), and third, their translation into finance, manpower, and policy, etc. (Budgeting).

Recognizing the results of researches by Novick and Hitch of Rand Corporation of the U. S. A., the then Secretary of Defense Robert McNamara introduced PPBS to the Pentagon in 1961.^{29,30)} After favorable evaluation as an effective management technique, in August 25, 1965, President Lyndon B. Johnson ordered the Federal Government to adopt this system. Nine months later, the state of California adopted PPBS, too. Between 1966 and 1971, California State University attempted the full-scale introduction of PPBS, at the instruction of State Government.³¹⁾ PPBS, however, ended up with only partial application. Even the Federal Government retreated from PPBS

method in its 1973 budget deliberation, though it made it possible for the Bureau of Budget Planning to request the appended papers in the PPBS form.³²⁾

The U. S. government and universities attempted to introduce PPBS mainly because of its successful application at the Pentagon. A military organization is a systematic and authoritarian line of command, but government organization is different. In addition many factors in the military forces such as armament, specifications and characteristics of airplanes, or response ratio of mobility calls, can easily be expressed numerically³³⁾ while it is very difficult to quantify the achievements of the government or particularly a university. This seems to be one of the main reasons for PPBS to remain only in partial application at Universities.

According to Schroeder,³³⁾ there were as many as 2,000 papers and articles about the application of PPBS in education. This probably indicates that it is rather difficult to apply PPBS to education. Probably the full-scale application of PPBS in the U.S. universities is still some years away. In the U.S. the use of the techniques of management science in university administration is far greater than in Korea and a quantity of software has been developed for the information systems of the university administration. Nevertheless, the full-scale application of PPBS has not materialized in a university like the State University of California which had invested huge amounts of time and money for this purpose.

It is considered too early to think about the introduction of PPBS to Korean universities. However since PPBS is certainly one of the systematic approaches to rational administration, in-depth research and understanding of PPBS can make a great contribution to the development of university administration. But it must be emphasized that the firm establi-

shment of a management information system prior to the introduction of PPBS is essential.

2) Finance of Private Institution

The analyses of the current situation of education finance in Korea brought to light the following problems: the small volume of total educational finance, inadequate educational expenditure per students, heavy burdens on students and their families, and financial weakness of the private school foundations.³⁴⁾

The ratio of public educational expenditure to GNP is an indicator of a nation's capability of educational investment and the amount of its efforts. The ratio in Korea was 5.0% in 1979, 0.6% lower than the world-wide average, identical to the average of the Asian countries.³⁵⁾ Though the human resources development in Korea is more or less leveled with developed countries, capacities and efforts for educational investments are much lower. This means education in Korea has been carried out on a cheap basis.

The changes in the proportion of Korea's higher education expenditure to the GNP from 1970 to 79 is below 0.3%, while that of the advanced nations is considerably higher.

Table 1. The Ratio of Higher Education Expenditure to GNP of Major Countries

Country	Year	Higher education expenditure/ GNP %
U. S. A.	1978—79	2.39%(approximate figure)
U. K.	1965—66	1.1
	1980—81	1.9 (approximate figure)
Canada	1966—67	1.4
Japan	1964	1.1
France	1965	0.5

Source: 1) U. S. National Center for Education Statistics, 1978.

2) Barbara B. Burn. "Higher Education in Nine Countries" A General Report Prepared for the Carnegie Commission on Higher Education, McGraw-Hill Book Co, New York, 1971.

What is note-worthy in Table 1 is that

both Britain and Japan are shown to have invested 1.1% of their GNPs in higher education. In Britain, however, only 8.4% of the college-age group attended college in 1962, while in Japan there was 25% attendance in the same year. In other words, the proportion of the public educational expenditure per student in Britain is far higher than that in Japan. Thus, Britain could maintain its staff-student ratio of less than 1:8, which is unparalleled in the world. In this respect, investment in higher education in Korea is minimal. Also the expenditure for higher education has been heavily allocated to the public and national institutions leaving the private institutions in poor financial states. When the current composition of the public education expenditure and the number of college students in Korea is reviewed, the following conclusion was drawn.

In 1979, though the number of students of public and national institutions comprised no more than 29% of the entire college students in Korea, 40.5% of the public educational expenditure was allocated to the public and national institutions, while 59.5% went to the private colleges and universities.

An analysis shows that most of the public education expenditure is from parents.³⁶⁾ The total amount of the expenditure for 1982 reached 3,502.3 billion Won. Approximately 52% of the expenditure was borne by students and their families, while the government shared 46%. If this is analyzed we find that students of private institutions and their families account for 78% of the expenditure, and the share of the students of the public and national institutions and their families is 25%.

The proportion of private costs to total educational expenditures for the student of the national and public institutions was 37.86% in 1982, while for the student of the private institution amounted to 71.72%.³⁷⁾

Besides the relatively high proportion of their private expenditure, the tuition of students in the private institutions is 1.3 times larger than the per capita income.³⁸⁾ In other words, their tuition is higher than the standard of living in Korea, while the educational expenditure per person is one-third of that in the advanced nations. The government and the institutions in the private sector may have to take concerted action to solve the problem. There are two main reasons for the financial stringency of the private institutions in Korea; first, most of them are dependent on low income basic assets and business; second, they receive little financial support from the government to compensate for their financial difficulties.

The British university is an autonomous body, classified as a private organization in law. It depends on the public funds for 80—90% of its income. The grants are allocated to each university by the University Grants Committee which is run by member-professors. The precise amount of the grants are determined by the agreement between UGC and the university on a five-year basis. Each institution has considerable freedom in its use of the grants.

Though education and research in universities including the private institutions performs considerable public service, private institutions in Japan have been regarded as "mere private organization." This fact can be clearly seen in the building space per student in Japan. A national university student occupies 26.4m², while a private university student has the building space of 8.7m².³⁹⁾ But even Japan has now begun to subsidize some of the recurrent expenditures of the private universities. In 1977, Japanese Government subsidized 26.9% of the recurrent expenditures of the private universities amounting to ¥1,605 million.

In addition to the numerous problems in its educational finance, Korea is faced with

another set of problems; the increasing demand for college education following the trend of mass education and greater social demand for the improvement in the quality of education. To meet these demands, private universities in Korea have to look for new sources of finance. If the government recognizes their promotion of public services and interests it should provide greater financial assistance to the private institutions of higher education.

III. Concluding Remarks.

Only a dozen years have passed since the innovation of higher education began in 1972 as an attempt to enhance the academic excellence, which is an essential function of the university. It would be reasonable to state that the university in Korea is still in its infancy as an organization for research and scholarship. Now is the time for top academic management to revitalize colleges and universities with keen insight and energetic leadership.

University is an organization with dynamic characteristics and the essence of administration lies in performance. The problem facing the top academic management today is how to make the best use of the principles of management science, for the sake of education and research, within the cultural and social contexts of Korea.

Therefore, the author would like to conclude this paper with the following suggestions concerning several issues involved with the rational management of institutions in Korea. The Korea Council of University Education is greatly expected to play a crucial role in putting these suggestions into action.

First, concrete measures should be taken for the establishment of a system to enhance the managerial autonomy in higher education of Korea. The authorities concerned, which were mainly occupied with their supervisory function

in university administration in the past, will have to assume a new role of encouraging the self-rule of university administration. Towards this end, they will have to assess periodically the educational quality and administrative practices or provide support based on the results of their assessments to pave the way for the ultimate goal of autonomy in the administration of institutions. Furthermore, the present systems of the university entrance examination, and the compilation and execution of budgets have been widely regarded as the main factors causing the ever-widening gaps in quality among the institutions of Korea. Therefore, it is highly desirable for the authorities concerned to set up a basic set of guidelines and grant autonomous management within their limits.

Second, besides general administrative staff, specialists will be in demand not only in general administration but also in governmental administration of education. Consequently, steps should be taken to train specialists in educational administration or provide on-the-job training to those already involved in it. The system of personnel management should also be improved for better working conditions and further development of administrative skills. For instance, a system must be established for the appointment of specialists of educational administration to the posts of educational administration, and also the functions of the institutions training the administrative staff need to be reinforced.

Third, more researches should be done concerning the modern administrative techniques, and various methods of their application should also be considered. Some institutions have won positive results from the use of computers in their administration. Therefore, various studies and developments are needed to apply such modern techniques as PPBS, Systems Approach, Management Information System etc. to our educational administration.

At the present stage, a full-scale introduction of these techniques is impractical. However, they can be applied gradually to certain limited areas such as academic records, salaries, timetable design, and material management.

Fourth, for the facilitation of the smooth flow of information and data necessary for the administration of institutions, an integrated center of information and data should be established to collect, analyse and disseminate relevant information and data obtainable from the foreign and domestic institutions, academic research centers, and government agencies. The Korea Council of University Education can assume this function temporarily until the establishment of such an organization. Especially the American Association of State Colleges and Universities is expected to render a great help in collecting information from abroad.

Fifth, positive measures should be taken to provide the private institutions with financial support. In spite of their importance and tremendous contributions to education in Korea, financial support on the part of the government has been rather negligible, compared with other countries. Consequently, a form of legislation to foster private institutions should be seriously considered so that guidelines can be set up for securing financial sources and support such as research grants to professors, subsidies for special programs (i.e., purchase of expensive educational facilities), tax benefits and loans at low interest to private school foundations, and scholarships directly to students.

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