



# 教育與現代化

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# 自序

本書係將作者出版第一本教育文集「教育與訓練」之後，一連串所發表之學術論文、刊登在各報章期刊上之專論、演講稿、座談會記錄、以及訪問錄等加以整理、匯集而成。各文之發表固然有其不同之時空背景與內容，然其中心目標則一——即在透過教育概念與問題之闡釋與分析，以謀協助教育問題之解答或解決。全書之所以特重教育概念之分析，乃因作者堅信：欲圖一國教育之現代化，必先從教育觀念之現代化着手。教育觀念若始終囿於傳統，偏執一方，則教育措施斷無突破創新之可能。本書之所以取名「教育與現代化」，其主要用意即在於此。

本文集之得以順利出版，首應感激各有關教育學術團體、報社、出版社之爲我提供發表拙見之園地。其次應感謝幾位採訪者以及就讀政大教育研究所博士班之簡楚瑛小姐之費神代爲整理文稿。此外，對於程婷、葉靖雲和王瑞琳等三位政大教育系同學之詳爲校對文稿，亦一併在此致謝。

黃炳煌

民國七十三年十二月  
序於木柵指南山麓

## MODERNIZATION OF EDUCATION IN THE REPUBLIC OF CHINA SINCE 1949\*

“Modernization” is perhaps one of the most likeable and talked-about words nowadays. Cries for “political modernization,” “educational modernization,” “agricultural modernization,” etc. can be heard at every corner in the world. While there is consensus among all nations, whether they be developed, developing or underdeveloped, on the importance of modernization for the continued prosperity or mere survival of their countries, there is no commonly agreed-upon definition of “modernization.” In some countries, “modernization” is simply a synonym of “westernization.” In others, it is even narrowed down to success in “industrialization.” Even sociologists, economists, and political scientists, between and even within their own fields, hold different concepts of “modernization.”

However, I may venture to define “modernization” as a “comprehensive and integrated process by which a nation strives to realize an ideal and a progressive life.” While there is little doubt that the idea of “progress” is a distinct manifestation of the modern spirit, the term “progress” itself is still an elusive one and, as such, needs to be further clarified.

It is of the writer's opinion that “progress,” and for that matter “modernization,” is characterized by at least three essential features. They are: efficiency, rationality and humanity. Let me elaborate on each of these three characteristics in some more details.

**EFFICIENCY** “Efficiency” may be defined as “producing as much as possible with the least cost.” Modernization and efficiency go hand in hand. Nothing can be said of “modernization,” if there is lack of efficiency. For example, the major characteristics of industrial modernization such as “mechanization,” “automation,” “management by objectives,” etc., are all designed to achieve the goal of “efficiency.”

**RATIONALITY** By “rationality” I mean the attitude or psychological orientation towards “demanding for empirical evidence.” It also refers to the tendency of having things stand the test of reason. Wishful thinking, emotionality and superstition are all antithetic to rationality. Political modernization is chiefly aimed at achieving “freedom” and “equality,”

\* This paper was presented at the first Sino-European Conference on Chinese Modernization (September 10-15, 1984) sponsored by the Institute of International Relations.

because people believe that "democracy" characterized by universal participation is far more reasonable a form of polity than "autocracy." Economic modernization seeks for "equal distribution of wealth," "profit-sharing," and "the protection of consumers," because we believe that these are more reasonable and desirable than "monopoly" and "wealth concentration in few." In a word, religious superstitions, political myths, cultural ignorances and economic trusts are all irrational or unreasonable, and as such have to be gotten rid of the road to modernization.

**HUMANITY** By "humanity" I mean the attitude of "treating humans like human beings," that is, to respect the dignity and integrity of other persons. Inkeles, in his discussion of "the modernization of man," identifies "the stress on dignity" as the seventh characteristic of the "modern man." He observes, "the more modern man, we feel, is one who has more awareness of the dignity of others, and more disposition to show respect for them."<sup>1</sup> A modern prison deserves its name not simply because of its equipment with the latest, most efficient electronic devices or lethal weapons, but also because of its humane ways of treating the prisoners—letting them walk and work freely without hand-cuffs or fetters most of the time within the prison walls. Some modern prisons even set up a "guest room" where a prisoner can meet or even spend a night with his (or her) spouse or relatives. The same is true of a "modern" zoo, or "modern" slaughter-house where the living or dying animals are all treated in somewhat humane ways.

Using these three major characteristics of modernization—efficiency, rationality and humanity—as points of reference, the writer tries to examine in the following the process of educational modernization in the R.O.C. since 1949.

## **I. Efforts and Progress Made Towards Achieving the Goal of "Efficiency"**

### **1. The Rapid Growth of Educational Population at all Levels of Education**

The most impressive and concrete evidence of success in educational modernization in the R.O.C. since 1949 has been the popularization of educational opportunity throughout the country. Between 1950 and 1983, the number of students at the elementary level has increased 2.46 times, at the junior high level 12.84 times, at the senior high level 12.26 times, and at the college level 56.37 times. The student population increase during the same period was from 7,554,399 in 1950 to 18,515,754 in 1983, about 2.45

times. As of 1983, the enrollment ratio was 46% for higher education and 60% for upper secondary education, while at the level of compulsory education for children from 6 to 15 years old, the ratio was 98.6% for lower secondary education and 99.79% for primary education. Today, the student population at all levels has increased to more than 4,724,000, accounting for 25.51% of the total population.<sup>2</sup>

## 2. The Implementation of the Nine-Year Compulsory Education

To raise the general educational level of the people to meet the needs for national reconstruction, the duration of free education was extended from six to nine years in 1968. Since the promulgation of the Act of Nine-Year Compulsory Schooling in 1982, receiving the nine-year free education has officially become an obligation for every school-aged child. In the 1968-69 school year, there were 2,244 elementary schools with 2,383,204 pupils and 487 junior high schools with 617,225 students. Fourteen years later, in the 1982-83 school year, the number of elementary schools had increased to 2,457 and that of pupils to 2,226,699; the number of junior high schools had increased to 661 and that of students to 1,082,358.

Furthermore, an ambitious, experimental program got under way last year to try to extend the nine-year compulsory education to twelve years by requiring all the "out-of-school" youngsters aged 15 to 18 to receive part-time vocational training either in vocational high schools or in factories so as to achieve the goal of "Twelve-Year National Compulsory Education."

## 3. Expansion and Improvement of Vocational and Technical Education

In the 1950-51 school year, there were altogether 77 vocational schools with 34,437 students, of whom 23,211 were in junior vocational schools and 11,226 in senior ones. Of the total number of students in vocational schools, agricultural vocational schools accounted for 35.4%, industrial vocational schools for 25.7%, commercial vocational schools for 32.0%, and others for 6.9%. In the 1982-83 school year, the number of vocational schools had increased to 202 and that of students to 394,258. Of this total, agricultural vocational students accounted for 4.41%, industrial vocational students for 49.50%, commercial vocational students for 37.82%, and others for 8.27%.

Especially noteworthy is the establishment of the National Taiwan Institute of Technology in 1974. This institution was created to provide senior college education for the graduates of vocational schools to receive

further schooling through the channel of junior technical college and technology institute, thus completing an integrated system of technical and vocational education.

#### 4. Emphasis on and Improvement of Science Education

In order to speed up the pace of national construction and to improve the quality of life, the government has placed a great emphasis on science education at all levels of schooling. A great deal of money and efforts have been invested on (1) recruiting overseas Chinese scholars and scientists for teaching at colleges and universities; (2) training science teachers at home and abroad; (3) equipping the schools with the latest scientific instruments; (4) updating the school's science curricula, and (5) promoting cooperative ventures between schools and enterprises. An experimental program got under way recently to promote the teaching of computer science in high schools so as to enable our younger generation to meet the new challenge of the computer age.

#### 5. Implementation of Educational Planning

Efficiency is achieved not by chance, but by design or planning. Although the first stage of the "4-year Economic Planning" was initiated as early as 1953, it was not until 1969 that educational planning was included as an integral part of the total economic planning. Five years later (1974), a special unit called "Educational Planning Commission" was set up in the Ministry of Education to carry out systematic research on educational planning.

#### 6. Implementation and Institutionalization of Educational Evaluation

Closely related to program planning is program evaluation. The first educational evaluation was carried out in 1975 at university and college levels (including junior colleges) under the direction of the Ministry of Education. Since the general responses from both the professionals and the general public were quite favorable, it was later expanded to cover all levels of schooling. Today, educational evaluation has become an integral part of general educational practices in the R.O.C.

#### 7. Establishment and Expansion of Extension Education Programs

In order to make elementary teachers discharge their responsibilities more effectively, the first in-service teacher education center was set up in



Pan-Chiao ( 板 橋 ) in 1956. During the 1960s and the 1970s, all junior teachers' colleges were charged with the responsibility for upgrading the educational level of elementary teachers from high school to junior college level. Since then, various types of continuing education programs have sprung up throughout the nation.

In addition, a "University on Air," similar to England's Open University, has been in preparatory stage for the past few years. Once established and effectively operated, it will open up a new world for those thirsting for new knowledge and skills outside the school walls.

Other educational ventures and practices such as: (1) ability-grouping introduced into national middle schools in 1968, (2) experimental programs for the talented children (1972), (3) competence-based education, etc., were all aimed at increasing "efficiency" in education.

## **II. Measures Taken to Achieve "Rationality" in Educational Policies and Programs**

### **1. The Improvement of the Joint College Entrance Examination**

It has been 30 years since the system of the joint college entrance examination was first adopted in 1954. The system has undergone many changes and revisions, but the key principle remains the same — admitting only those who have successfully passed a two-day joint entrance examination. Once a year, at the beginning of July, all universities and colleges in the country jointly hold the college entrance examination and admit a certain quota of freshmen set by the Ministry of Education on the basis of their scores and choices. Approximately 90,000 to 100,000 applicants take the examination each year, of whom only 25% are admitted to colleges and universities.

In order to lessen the heavy pressures on the examinees, the government has been continuously revising the joint entrance examination practices so as to make it more reasonable and bearable to the examinees. The improvements are being made along three lines: First, the principle of social equality is strongly stressed. The examinations are held with utmost scrupulousness and there is no manifestation whatsoever of favoritism or dishonesty throughout the entire process. Secondly, since the tests used in the joint entrance examination are achievement tests, and not standardized tests in nature, efforts are being made to develop more objective types of aptitude, vocational and achievement tests. Thirdly, in view of the fact that the schools

tend to cram their students for the entrance examination at the expense of the total development of the student personality, various efforts are being made to negate these adverse effects.<sup>3</sup> Starting this year, a new system of the joint entrance examination will allow the applicant to apply for admission to the department of a particular college or university of his own choice, after, instead of before, the examination, so as to match more closely the student's abilities and the college's requirements.

## 2. Enactment of School Laws and Updating of School Curricular at All Levels of Education

In order to meet the changing needs of the students and the society, school laws and curriculums have to be continuously revised and updated. Major curriculums revised during the 1970s and early 1980s included: (1) The new elementary school curriculum (1975); (2) The new junior high school curriculum (1983); (3) The new senior high school curriculum (1983); (4) College and university course requirements for graduation (1983). The key points of the revisions centered around: (1) achieving "articulation" between the curriculums of the upper-level and the lower-level schools, (2) reducing the number of required courses through course integration and (3) providing more flexibility and diversity in course offerings. Major school laws enacted and promulgated by the government included: (1) Private School Law (1974), (2) National Compulsory Education Law (1979), (3) High School Law (1979), (4) Teacher Education Law (1979), (5) Pre-School Education Law (1981), and (6) University Law (1983). Currently, Special Education Law is being drafted by the Ministry of Education and will soon be sent to the Legislative Yuan for passage.

## 3. Planning for the Reform of School System

In order to realize more fully the ideal of equal opportunity for education, to help the individual adjust more smoothly to radical social changes, and to meet the needs of society, the Ministry of Education set up in April, 1983, the "Commission on Reforming the School System" to carefully study and evaluate the current school system, and to come up with a draft plan for a new school system. On November 26, 1983, the Commission presented to the Ministry a "Draft Plan for a New School System." The first chapter of the draft was devoted to the review of the shortcomings of the current school system and its needs for reformation. The second chapter set forth ten principles underlying the reform of school system. The third

chapter listed extensively the key points of the reform. Chapter four outlined several administrative measures necessary for the smooth implementation of the plan. The last chapter was a figure of the new school system. Although the draft plan has caused many controversies and heated debates among the professionals and the general public alike, the proposed new school system has undoubtedly more merits and fewer demerits than the current one.

#### 4. Steady Increase in Financial Assistance to the Private Institutions of Higher Learning

Because of the long tradition of the government's "low tuition policy," and the public's bias against the private colleges and universities, the institutions of higher learning have suffered a great deal academically and financially. Various studies sponsored by the government and private institutions have found that: (1) the charges of tuitions and fees for both public and private institutions of higher learning are far too low; (2) expenditures per student in public universities are much greater in comparison with those in private ones; (3) "low tuition policy" has a negative effect on the quality of higher education for both public and private institutions.

Being aware of the plights of the private institutions of higher learning, the Ministry of Education has taken the following measures to help alleviate their hardships:

(1) Helping the private institutions to set up a "faculty development program" by paying salaries to 150 full-time faculty members assigned to teach in 13 private universities and colleges in the country;

(2) Providing subsidies to private institutions for purchasing laboratory equipment (budget allocated for this purpose rose from NT\$80,000,000 in 1978 to NT\$200,000,000 in 1983);

(3) Helping set up a "faculty medical insurance program" by providing one-third of the insurance fee, with the rest shared evenly by the institution and the faculty members themselves;

(4) Helping set up a "student dormitory loan program."<sup>4</sup> These systematic, constructive measures have undoubtedly contributed a great deal to the improvement of the quality of private institutions of higher learning.

#### 5. Establishment of a Rational System of Selection, Preparation, Appointment and Promotion of Local Educational and School Administrative Personnel

Before 1970 nearly all the educational people could be appointed by their superiors to the posts of school principals, assistant principals and superintendents or section chiefs of the local school systems. Increasingly aware of the adverse impacts of this irrational practice on education in general, the Taiwan Provincial Government promulgated in 1970, for the first time in the history of Chinese education, the "Regulations Governing the Appointment and Promotion of Local Educational Administrative Personnel." Since then various kinds of regulations governing the selection, preparation, appointment and promotion of educational and school administrative personnel have been successively established and revised. Today, the criteria and procedures applied to the system have become so strict and vexatious that people begin to question whether the system has actually realized its original goal of achieving "rationality" in educational policies and practices.

### **III. Efforts and Progress Made Towards the Humanization of Education**

#### **1. Bridging the Gap between Urban and Rural School Systems**

Although the discrepancy in attendance rate between the rural and urban schools is quite negligible, the gap between the quality of both school systems is quite substantial. Until recently, little has been done to narrow the gap, resulting in a large influx of children and youths from the rural or small town areas into the better schools in the cities. Fortunately, some positive measures and actions have been taken recently by the Department of Education, Taiwan Provincial Government, to improve this situation. These measures include: (1) providing extra funds for the improvement of poor school facilities; (2) providing free meals and lodgings for those students and teachers who are compelled to stay overnight in school because of the remoteness of their residence; (3) giving special priority to good rural school teachers with regards to opportunities for advanced studies, transfers of school, promotions, etc.

#### **2. The Prohibition of Corporal Punishment and Ability-Grouping in Schools**

During the Japanese occupation of Taiwan, corporal punishment was so prevalent in schools that it was almost regarded as a way of school life. After the return of Taiwan to R.O.C. corporal punishment in schools was officially

denounced and prohibited by the educational authorities.

The practice of ability-grouping was universally and unquestionably adopted in junior high schools in 1968 when the duration of compulsory education was extended from 6 to 9 years. Unfortunately, due to the misconception and misuse of ability-grouping, there arose many adverse effects. To normalize teaching and protect students from further psychological encroachments, the government officially put an end to the practice of ability-grouping in junior high schools in 1979.

### 3. Promotion of Creative Teaching in Schools

In recent years, the educational authorities, especially the Taipei City's Department of Education, have been actively promoting creative teaching in the school system with a view of liberating the students' minds and developing their creativity to the fullest. This kind of development is long overdue and yet highly desirable, if we are to meet successfully the challenge of the rapidly changing society.

### 4. Institution of Guidance and Counseling Program in Schools

The first guidance and counseling program was introduced into junior high schools when compulsory education was extended from 6 to 9 years in 1968. As admission policy of the lower-level secondary education was changed from selective to non-selective one, the individual differences in aptitude and intelligence among the students were widened considerably. To help the youngsters adapt more smoothly to their school life, courses and services with respect to students' guidance and counseling were first provided in junior high schools in 1968. Today, guidance and counseling programs have become an integral part of the total school curriculum at all levels of education throughout the nation.

### 5. Withdrawal of the Proposed Plan for the Establishment of a "University on Air"

According to the original schedule of the Ministry of Education, a public "University on Air" was to have been officially set up in August, 1984. Since the proposal was made, arguments for and against the proposal have kept heating up as it comes nearer to the date for passage by the Legislative Yuan. The central question surrounding the debate is whether the graduates of the "University on Air" should be granted a bachelor degree equivalent to that of general universities and colleges. The main objection raised by the

opponents is that the "University on Air" can not successfully provide day-to-day, face-to-face human contacts between instructors and students and thus dehumanize the process of education and downgrade the quality of higher education. Just months ago, the new minister of education, Mr. Li Huan, officially announced the withdrawal of the proposal pending initial and final approvals by the Executive and the Legislative Yuan. It is of my opinion that the victory of the cons over the pros can be interpreted as a victory of "humanity" over "efficiency."

In addition to the above-mentioned measures, the following developments such as: (1) the establishment of special education programs for the mentally-retarded and physically-handicapped children; (2) the inclusion of the student's esthetic development as one of the five major goals of national compulsory education; (3) the construction of "culture centers" in each and every municipality and county capital; and (4) the renewed emphasis placed on the study of the humanities in the university's curriculum, etc., are all indications of the government's and the citizen's concern for and interests in the development of "humanity" in education.

From the foregoing, detailed analysis of the process of educational modernization in the R.O.C. since 1949, one point has become evident, that is, at the early stage (roughly from 1949 throughout the 1960s) of this continuing process of educational modernization, key emphasis was placed on achieving "efficiency" in education; in the 1970s, equal attention was paid to "rationality" in education; and it was not until the late 1970s (and throughout the early 1980s) that "humanity" has taken a stronghold in educational arena.

Needless to say, this developmental trend of "efficiency → rationality → humanity" in the process of educational modernization in the R.O.C. has not been so clear-cut in nature. As mentioned earlier, modernization is actually a complex, comprehensive, and integrated process. For example, educational planning is aimed at achieving both "efficiency" and "rationality", whereas the reform of school system attempts to obtain all three criteria — efficiency, rationality and humanity. In a word, it is "predominance or submergence," and not "presence or absence," of each characteristic which marks the special feature of each stage of educational modernization in the R.O.C. since 1949.

#### IV. Further Efforts and Developments Needed

Notwithstanding the excellent record of educational modernization in the R.O.C. since 1949, there is still room for further improvement. Modernization has to keep going since it is a continued, endless process. This view is commonly shared and frequently expressed by the leading educators, top educational officials and the governing agencies concerned. For examples, the chairman of the Committee for the Reform of the R.O.C.'s School System, Professor Liu Chen, observes that the proposal for the new school system should be characterized by its "practicality" and "foresightedness," and the proposed new school system itself should reflect the spirit of "innovation" and "flexibility."<sup>5</sup> Mr. Li Huan, the newly appointed Minister of Education, recently expressed his view at his first official interview with the news reporters that future educational policies will be formed on the basis of the following four principles: (1) consistency with the ideals of the Three Principles of People advocated by Dr. Sun Yat-sen; (2) matching the needs of national construction; (3) valuing the specialists' viewpoints; and (4) consideration for the wishes of the general public.<sup>6</sup> Early this year, the Committee on Educational Planning, a unit of the Ministry of Education, also suggested six principles governing the development of higher education in the near future. They are: (1) development of its own uniqueness by each institution of higher learning; (2) systematization of academic degrees; (3) normalization of school teaching; (4) diversification of curriculum designs; (5) sinicization of scientific terminology; (6) cooperation between universities and society.<sup>7</sup>

The Manpower Planning Committee, Council for Economic Planning and Development, held a meeting on April 26, 1984 to discuss the future policies for educational and manpower development. Out of this meeting came the following decisions: (1) to establish a "Commission on Educational Reform" responsible for drafting a ten-year educational plan; (2) to raise the tuition fees for higher education to a reasonable level, and at the same time make more scholarships available; (3) to provide financial assistance to private universities, and allow them to raise tuition fees as they see fit; (4) to offer introductory courses in laws, economics, sociology, political sciences, etc. in high schools; (5) to make vocational schools' curriculum designs and length of study as flexible as possible; (6) to seek more financial resources for the expansion of industrial courses taught in public vocational schools; (7) to lessen the rigidity in admission policies at all levels of vocational and technical education, and to establish a well-designed system of internship program; (8) to establish a viable network of informa-

tion on manpower market, and to pay due attention to the problem of "brain drain"; (9) to strengthen educational evaluation of college programs.<sup>8</sup>

Even though I am nearly in complete agreement with the above-mentioned opinions or proposals, I still have some additional viewpoints to offer for the continuing modernization of education in the R.O.C. The extras are as follows:

#### 1. With Respect to "Efficiency"

##### (1) Active Involvement of Professional Organizations and Citizen Groups in the Process of Educational Modernization

While it is important to pay much attention to the specialists' viewpoints and the wishes of the general public, it is far more essential for the educational authorities to encourage various professional organizations and civic groups to become more actively involved in educational decision-makings. Modernization of education can not, and will never, be accomplished by the government alone, however efficient it may be. As is mentioned by Eisenstadt, "modern societies are highly differentiated and specialized with respect to individual activities and institutional structures."<sup>9</sup> He also notes that, "perhaps the most central characteristic of modern societies is their basic mass-consensual orientation."<sup>10</sup>

This being the case, what modernization requires is "participation", and not mere "consultation". And it should be the kind of wide and full participation by the professionals and citizens as a group, and not just as individuals. Only through the collective wisdoms of the professional educators and their organizations, the citizen groups as well as the educational authorities can we make the wheel of modernization turn faster.

##### (2) Decentralization of Power for the Control of Education

So far one of the major criticisms made against the Ministry of Education is that its rein on educational affairs has been so tight that it has stagnated and suffocated the vitality and viability of its subordinate educational organs. To hasten the pace of educational modernization, it is essential to keep the control of education by the Ministry at the minimal level, and return the power for date-to-date, routine decision-makings to the local educational authorities and schools. Fortunately, a move towards this direction is in the making. On July 3, 1984, the new Minister of Education,



Mr. Li Huan, officially announced, at his first general meeting with his subordinates, that from now on the Ministry of Education will focus its functions on setting general policies and guidelines, serving as a coordinator between different levels or various sectors of educational authorities and agencies, and providing essential guidances and assistances whenever the needs arise.<sup>11</sup> This is a healthy sign of development and certainly a right direction towards the road to modernization.

## 2. With Respect to "Rationality"

### (1) Popularization of the Ideas and Importance of Creative and Critical Thinking

Modernization of a nation is impossible, or at least superficial and frangible, if the thinkings of its people are not first modernized. It is generally agreed that a modern man is one who shows readiness for new experience and openness to innovation and change. But his acceptance of new innovation and change is not without reservation. This reservation is exercised through one's critical or reflective thinking. It is of utmost importance that the traditional ways of teaching such as heavy emphasis on memorization, recitation and testing of fragmented, factual information be totally discarded and the cultivation of critical and creative minds be given top priority at all levels of schooling.

### (2) Strengthening the Functions of Educational Research

The general approaches taken by the educational authorities to solve educational problems have been through holding meetings or conferences attended by educational officials and experts, or administering, in most cases, poorly-conceived and loosely-designed questionnaires. But the truth is that most educational problems are not automatically solved through conferences or surveys. They must be settled and resolved through longitudinal, rigorous, systematic research and evaluation.

Unfortunately, so far little effort has been done and little money has been earmarked by the educational authorities for this purpose. It is high time that a "National Institute for the Research of Education" be set up as soon as possible to fulfill this important function.

### (3) Full Realization of the Ideal of Self-Governance by University

In recent years, especially during the past few months, cries for