

Pan, H. L., & Yu, C. (1999). Educational reforms and their impacts on school effectiveness and improvement in Taiwan, R.O.C. *School Effectiveness and Improvement*, 10(1), 72-85.

Educational Reforms: Their Impact on School Effectiveness and School Improvement in Taiwan, R.O.C.

Hui-Ling Pan and Chien Yu
National Taiwan Normal University

ABSTRACT

In order to investigate educational development in Taiwan, R.O.C., this paper is divided into six sections which discuss issues whose main focus is the educational reforms of primary and secondary education. First, the cultural and societal contexts are explicated, followed by descriptions of the current school system. The third section analyzes educational reforms advocated during these recent years, including the elaboration of ideas, claims and actions. Problems for educational reforms are explored in the fourth section. In the fifth section, a retrospective reflections on research in education are made. Finally, some conclusions are drawn.

During the past decades, Taiwan has created an economic miracle and the entire society has been going through rapid transformation. With the great impact from the West, traditional culture was challenged, attempts to “inherit Chinese culture critically and develop it creatively” are therefore claimed (Fu, 1991). The urge for political democracy influences the operation of the whole society. Education, being intertwined with the complexities of society, has also encountered dramatic changes. Hence a great deal of demands for educational

reforms exist. The main focus of this paper is the subject of educational reforms, especially in primary and secondary education. In addition, research in education will be analyzed. In sum, the present paper consists of six parts: (1) cultural and societal contexts; (2) the current school system; (3) educational reforms; (4) analysis of problems in instituting educational reforms; (5) research in education; and (6) conclusions.

CULTURAL AND SOCIETAL CONTEXTS

As Taiwan is located in the center of the Asian Pacific region, it is influenced by different cultures. Although Taiwan had been occupied by Holland and Japan for one hundred years, the dominant culture came from China. Chinese culture is composed of a number of philosophical systems such as Confucianism, Taoism, and Buddhism. Among these, Confucianism has been the most influential one in Chinese society. Confucian beliefs are used to organize educational programs and processes. Based on Confucianism, to be a teacher and to attain higher education are regarded highly, and people usually try their best to pursue as much education as they can. Certain traditional values such as loyalty, filial piety, conformity, industriousness and cooperation are emphasized in the schools.

While the heritage of nationalism and collectivism are stressed, western philosophy with regard to the respect for individuality also strikes the traditional Chinese mind. The strong and irresistible influences from the west might be traced back to the late-Qing Dynasty. Western technology shocked the closed Chinese society when western countries invaded China one after another. How to integrate western thoughts into Chinese philosophical networks has been debated ever since. After the founding of the Republic of China in 1912, scholars continued to debate this topic, which culminated in the May Fourth New Cultural Movement of 1916. The ideology of totalistic antitraditionalism prevailed at that time (Lin, 1989). Democracy and science were two of the most important influences advocated. But

under the long lasting civil and Sino-Japanese wars, those concepts had little chance of being implemented in China. When the Central Government of Chiang Kai-shek moved to Taiwan after the Communist's takeover of the mainland in 1949, Chinese traditional culture began to be revitalized in Taiwan. Currently, scholars (e.g., Fu, 1991; Lin, 1989) advocate creatively transforming Chinese traditional culture.

In addition to Confucianism, politics also exert an influence on education, which was first put forth in the Goal of Education of the Republic of China promulgated in 1929. Today, the aim of education in Taiwan based on the Three Principles of the People proposed by Dr. Sun Yat-sen, is to improve national living standards, support a decent existence in society, pursue economic development, and prolong the life of the nation so as to achieve independence of the nation, implementation of democracy, and advancement of the national livelihood. The ultimate goal is to attain the ideal world of universal brotherhood (Ministry of Education, 1994a, p.4).

Because of the unique political situation, Martial Law had been implemented to regulate Taiwanese society for 38 years. Political ideology informed the textbooks, and academic freedom was hindered. After Martial Law was abolished in 1987, Taiwan entered a new era. Now, a more democratic and open society prevails.

In addition to the influence of political democratization, western culture has been reflected in various perspectives of Taiwanese society, including music, movies, architecture, dance, and food. These influences are reinforced by a new generation who has obtained higher degrees from universities in the United States and occupies decisive positions in the government as well as in private business. However, after Taiwan, R.O.C. receded from the United Nations in 1972 and the break of ties between the US and the ROC in 1978, there was a call for a new worldview. At the same time, a movement toward emphasizing the indigenous elements in Taiwanese society and culture became prevalent, which was shown not only in the arts such as the emergence of college campus folk songs, a new Taiwanese cinema, and the promotion of traditional folk arts, but was also reflected in

education—particularly the newly publicized Curricular Standards of elementary and secondary schools which emphasize indigenous education.

THE CURRENT SCHOOL SYSTEM

Taiwan's experiences in political and economic development have been important issues among academics in political science and economics. Although a number of factors could be attributed to the economic prosperity of the country, education has contributed substantially to Taiwan's prospering economy. With the active role of the Central Government, compulsory education was extended from six to nine years (six-year elementary and three-year junior high school) in 1968 in order to enhance the general capacity of the people. For the economic development of labor intensive industries and the delay of tracking, junior vocational schools were terminated and senior vocational schools were fully supported by the government. In the 1970s, to meet the urgent need for manpower, many two-year junior colleges or five-year technical ones were established. With the transformation of the economic structure from labor-intensive industries to a capital and technology-intensive one, public four-year technical institutes have been set up to meet the higher-level need for manpower. Now the school system in Taiwan is six years for primary school, followed by three years of junior high school. Afterwards, three years of senior high school, vocational school or a five-year technical school are the choices available for students. Post-secondary education includes three years of junior college or, usually, four years of college/university with the exception for departments such as dental and medical science, which take six and seven years respectively.

Statistics further evidence the educational development in Taiwan. In 1996-1997, there were 2,660 kindergartens, 65.3% of which were private. In contrast, among 2,519 elementary schools and 717 junior high schools, 99.1% of the former and 98.7% of the latter were public (Ministry of Education, 1997). These figures indicate that nine years of compulsory education

was viewed by the government as one of its main responsibilities. In order to provide people with equal educational resources, private schools were allowed to establish themselves for a short period of time in the past, but afterwards were forbidden for years. However, owing to dissatisfaction with public schools, people have begun to advocate the re-introduction of private schools.

Concerning the second stage of secondary education, there were 217 senior high schools and 204 vocational schools. A little less than 50% of these two types of schools were public. Rapid growth might be seen in higher education; there were 70 junior colleges, 43 four-year colleges, and 24 universities in the 1996 school year (Ministry of Education, 1997).

EDUCATIONAL REFORMS

Three Forces Advocating for Educational Reforms

Looking back over the past forty years, education in Taiwan did make progress in quantitative as well as qualitative terms. However, the traditional Chinese concept that "scholarly work is superior to everything" results in serious problems in schools where the aim of students is to enter college. The normal development of individuals has been distorted, and schools have become preparation institutions for high schools and colleges. Facing these long unsolved problems, people have reached a threshold of toleration and civil organizations were formed to address these issues. Their common goal is to create a healthy educational environment for students. The degree of the peoples' concerns for education was displayed by a demonstration of approximately 10,000 individuals on April 10, 1994. After the demonstration, different affiliated groups were united, which resulted in an organization called "410 Education Reform League". Four demands were clearly expressed: (1) to have small-sized schools and classes, (2) to greatly increase high schools and colleges, (3) to draft a "Basic Education Law" and (4) to modernize education.

Encountering this eagerness for educational change, the Ministry of Education held its 7th National Education Conference in June, 1994 (Ministry of Education, 1994b). Based on the conclusions of the Conference, the Ministry proposed its "Education Report in the Republic of China" in February, 1995. Two main ideas in the Report are: (1) to lessen the pressures on students to enter higher-level schools, and (2) to "free" education (Ministry of Education, 1995).

Although the Ministry of Education has been devoted to educational improvements for years, people are still not satisfied with the educational quality that they have. Recognizing that the solution of education problems needs to involve different ministries of the Central Government, the Ministry of Education suggested the establishment of a Council on Education Reform. At the same time, being aware of peoples' expectations for change, the Central Government announced that education, along with politics and the judiciary, were the three major areas for reform in Taiwan. President Lee appointed the Nobel Prize Winner, Dr. Y. Z. Lee, as the Director of the Council on Education Reform, which was affiliated with the Executive Yuan. The Council was officially set up on November 21, 1994 as a two-year temporary institution. Its main task was to propose the plan for education reforms in five reports, including the concluding report issued in December, 1996. Five directions for reform actions were declared: deregulating education, helping every student to learn, broadening the channels for students' recruitment, promoting educational quality, and establishing a life-long learning society (Council for Education Reform, 1996).

In sum, the civil organizations, the Ministry of Education, and the Council on Education Reform might be characterized as the three main systematic forces advocating educational reforms. However, academics, including those who are outside as well as inside the educational profession also demonstrated their passion and desire for reform. And it is surprising that voices from scholars of non-educational professions are even louder and stronger than those of education professionals.

Political democratization always influences the process of policy decision-making.

Since the repeal of Martial Law in 1987, the Ministry of Education were more open to opinions from the outside and started actively to promote reforms, although it did not satisfy the public. Summarizing the viewpoints proposed by different groups, some are commonly shared, whereas some are not. The following is a discussion of the main ideas, demands and actions of today's education reforms in Taiwan.

Deregulation

Education, being one main area affecting the society, reflects the fundamental nature of its political system. In the past forty years, Taiwan's system of education was characterized by its centralization. From the educational budget, designation of university presidents, to unified standards of curriculum and textbooks in primary and secondary education--all were decided by the central government. This lack of flexibility prevented education from fulfilling the nation's needs in a number of ways. Therefore, a strong call for reform manifested itself.

First of all, deregulation was the first concept proposed by the Council on Education Reform, trying to loosen all inappropriate regulations. Seven parts were suggested for deregulation: adjusting the central educational administration system, adjusting educational administration and teaching in primary and secondary education, guaranteeing professional autonomy of teachers, promoting the deregulation of primary and secondary education, promoting the deregulation of higher education, promoting the deregulation of setting up private schools, and promoting the deregulation of concepts rooted in the society (Council on Education Reform, 1996).

Equality of Educational Opportunity

Equality of education is the goal striven for by the government in the long run. Many efforts have been made to achieve this goal. First of all, focus is directed toward opportunities for entrance at every school level. The school district recruits pupils for compulsory education. Beyond that, from senior high school to graduate school, entrance examinations are used to

screen qualified students. This examination system has a long, and deeply rooted history in Chinese culture and has been retained up to the present.

Entrance examinations have their advantages such as fairness and effectiveness on the selection of a talented young generation. However, it barricades those who are non-academic bound and those who have special talents but do not benefit from paper-and-pencil tests. Therefore, a new system which combines recommendation and examination is used as a parallel way to recruit college students; this system will be further discussed shortly.

In order to create college enrollment opportunities for vocational students, a number of colleges of technology have been established during the past few years and 2-year programs in colleges of technology have been set up. Besides, in junior high schools, a new program has been promoted for pupils who are not interested in academic learning. A one-year training in practical arts in the 9th grade is offered.

Equal educational resources for each school is another focus of the Ministry of Education. In order to equalize differentiation among areas, the Ministry of Education designated several Educational Priority Areas to be financially supported.

Opening All Universities to Set Up Teacher Education Programs

The quality of teachers is the single most important factor to success in education. For years, teacher quality in Taiwan has been highly controlled. Teachers of primary schools are mainly trained in Teachers Colleges and teachers of secondary schools are mainly trained in Normal Universities. However, a revolutionary change which broke up the so called "monopoly system of teacher education" occurred after the "Teacher Education Law" was passed in 1994. Since then, every university/college may set up teacher education programs as long as those programs meet the requirements set by the Ministry of Education. The right and responsibility for teachers training no longer belongs solely to the Normal Universities and Teacher Colleges.

According to the "Teacher Education Law," four teacher education programs might be

set up, which include early childhood education, primary education, secondary education and special education. All the programs need to be accredited by the Teacher Education Council, organized by the Ministry of Education. At the beginning, fifteen universities were allowed to recruit students in the Fall of 1995 (Pan, 1995). Since then, the numbers have been increasing.

The Reformation of the School System

The basic framework for the current school system in Taiwan was formed in 1922. In order to promote quality education, compulsory education has been extended from six to nine years since 1968 and the plan for the inclusion of the 10th year has been discussed for years. Two alternative methods have been considered regarding inclusion. One is to extend the 10th year to the 10th grade; another is to include 5-year-olds to the school.

At the high school level, 5-year technical schools, which recruit students from junior high schools, are reduced, and 2-year junior colleges or technical colleges, which recruit students from high schools and vocational schools, are promoted.

For years, the ratio of vocational students to that of high school students had been set at 7:3, which was converted to 6:4 because most of those who are seeking an education would like to enter college. Therefore, more high schools are needed. In addition to establishing new high schools in the coming years, a number of junior high schools have now been changed into 6-year secondary schools, primarily because of the difficulty in providing land for schools.

Another reform for secondary education is the experiment regarding comprehensive high schools. In order to delay the tracking of students, a number of comprehensive schools, supervised by the Ministry of Education, are under experiment.

Reducing School Size and Class Size

Students' learning outcomes are influenced by many factors. Size of school and class is one of

the most important factors for it greatly influences teacher's workload, interaction between teacher and students, interaction among students, and the chances to use facilities and equipment. In the last few years, reducing the size of schools and classes has become a strong demand of the "410 Education League", which has caught the attention of the public and has resulted in great pressure on the Ministry of Education to accelerate its progress. It is suggested by the League that the classes should be limited to 20 classes for elementary school, 4 classes per grade for secondary school, and no more than 30 students for every class, which is a goal deviating from what the Ministry of Education proposed. In the "Education Report of the R. O. C.", the Ministry of Education suggests a target of 35 students per class as the goal to be achieved before 2001 (Ministry of Education, 1995) .

According to the statistics, the average class size in Taiwan was around 34 for elementary schools, 43 for junior high schools and 46 for high schools as of the 1994 school year (Ministry of Education, 1997). These figures were boosted by the high class size in cities since classes with fewer students were commonly seen in rural areas. For example, among the 2,519 elementary schools, 62% of the schools had less than 19 classes (Ministry of Education, 1994c). Compounding this high school and class size issue, acquisition of land for schools in crowded cities has become a crucial problem that the government needs to solve.

Multiple Ways of Recruiting Students

Using tests to select competent people for civil service is a Chinese tradition--its concrete form is joint entrance examinations for senior high school, vocational-technical schools and colleges

--which are now practiced in Taiwan.

The Joint Entrance Examination was fully supported for its openness and fairness. It may prevent inappropriate influences from affecting the student recruitment process. However, its side effect is screening out special, talented students who can not perform very

well through typical pencil-and-paper tests. Besides, the fairness of the examination is challenged, for the examination might only benefit the middle and upper classes, while it may adversely affect the culturally and economically disadvantaged children whose parents could not afford to hire tutors or send children to cram schools to prepare for school entrance examinations.

In order to lessen the negative effects, a new college student recruiting system was proposed by the Center of College Entrance Exam (CCEM), a supportive half official and half civil organization. The new system is a combination of recommendation and examination and is used as a parallel to the traditional joint exam. The recruitment process comprises two stages. In the first stage, the student takes a general test which is held by CCEM. And in the second stage, the student takes tests held by the department which s/he chooses to enroll in. The student needs to show his/her capabilities in order to pass the requirements set by the department. This system has been enforced for five years. Besides, since the traditional College Joint Entrance Exam has been criticized, the CCEM is revising the existing system and is also investigating alternative systems to recruit students.

In addition to the college entrance system, the high school joint entrance examination is also a focus for improvement. First, a project of "Self-Will of Selection of Secondary Education Track" was proposed with its purpose to lessen students' burden for entrance examinations. The junior high school GPA is used as the criteria to enter high school. However, constrained by the weakness of the design, the outcome is disputable. This experimental project might be revised as an alternative of high school entrance system. Second, a system combining recommendation and examination for high schools and vocational schools was started from the 1996 school year. Since entering community high schools without testing is the goal the government trying to pursue, the above two high school entrance systems pave the way to utilizing students' performances of junior high school as the criteria for recruitment.

Opening the Textbook Market

The political climate of centralization in the past was reflected in the unified Curricular Standards in secondary and primary education. Standard textbooks were used except the subjects of arts, physical education, home economics education and industrial arts. In response to the call for deregulation, all textbooks for primary education were opened to the market in 1996. Any individual book publishing company can now issue books for designated school use after they have been reviewed by the Ministry of Education, which is still responsible for setting the standards for the curriculum, and overseeing educational quality control.

ANALYSIS OF PROBLEMS IN INSTITUTING EDUCATIONAL REFORMS

The wheels of educational reform keep on turning. More and more suggestions and measurements are proposed. However, when groups espouse different ideas, problems arise. Problems surfacing which need to be clarified and solved are such as to initiate the establishment of new norms, to address the shortage in the educational budget, to deal with the crisis of anti-professionalism, and to form a common recognition of the school as the center of change. The following summarizes these issues.

The Establishment of New Norms

The education system has been centralized for years. Most of the education policies and measurements are decided and controlled by the central government. Because of the peoples' eagerness to be free from government control, deregulation has become a hot issue. It seems that there is a tendency to believe that the less control the government has, the better education will develop. After all the inappropriate government ties have been severed, the establishment of new norms to maintain educational excellence will become another serious issue that Taiwan has to face.

The Shortcomings of the Educational Budget

According to the Article 164 of the ROC Constitution before 1997, it was stipulated that "the budget for expenses on education, science and culture should not be less than 15% of the total budget of the central government, 25% of that of the provincial government and 35% for the regional municipal government". Although since 1981, the budget for education, science and culture has been more than 15% of the total budget each year, and the figure was increased to 18.43% of the total budget in 1993, it still could not meet the educational needs because culture and science have taken part of the budget pie. Besides, the shortage of budget was vividly shown in the provincial and municipal government. Now the situation might get worse since the aforementioned Article was abolished by the National Parliament in 1997. This situation might jeopardize education because of shortages of funds, thus obstructing educational reforms such as reducing class and school size, and setting up new high schools and colleges, which require larger budgets than ever before.

The Crisis of Anti-Professionalism

Anti-professionalism seems to be a common crisis which affects many countries. For example, alternatives of pre-service teacher education such as alternative certification in the USA (Roth & Piphon, 1990), and licensed teachers and articulated teachers in England (Aldrich, 1990) have been enacted in several countries. Taiwan has similar programs for teacher training.

In addition to teacher education, anti-professionalism is seen in other places as well. For example, at the outset, not even one scholar from the Normal Universities was invited to join the Council on Education Reform, which was composed of twenty-eight members in response to the call for educational reforms. It is ironic to exclude scholars from Normal Universities as Council members when "pluralization" was declared by the Council as one of the reform directions. It was not until one year later when two members quit the Council that three of the five new members recruited were teacher educators. As such, the total Council members then

numbered to 31. Therefore, how to deal with the crisis of anti-professionalism becomes another serious issue we have encountered.

The Need to Form a Recognition of the School as the Center of Change

Policy can not mandate what happens, so the sole reliance on top-down change usually results in failures. The framework for educational reforms now has been proposed by the government, then the following step is to make the school as the center of change.

During these years, teachers seem to be in a passive position when facing the reform proposals. They feel that they are the subjects to be reformed rather than being the change agents. The approach to educational change now should be school-based. The school needs to make change every teacher's business and view change as an opportunity instead of a burden (Hopkins, Ainscow & West, 1994). Only recognizing the school as the center of change, the goal of self-renewing school becomes possible to be accomplished.

RESEARCH IN EDUCATION

Retrospect

In the past decades, Taiwan's educational research has grown with vigor, and what researchers are concerned about covered a wide range of topics, which can be categorized as (1) educational thoughts and history, (2) educational psychology and counseling, (3) educational system and administration, (4) curriculum and instruction, and (5) special education (Chen, 1985). Chen (1985) found that there was a time trend for the selection of topics and he also found that a quantitative paradigm prevailed when analyzing educational studies in the past forty years.

With regard to these issues, 1971 seemed to be a turning point. Before 1971, the discussions in most theses and dissertations fell into the category of "educational thought and history", which was about 30.72%. But after 1971, a switch of interests occurred, with most of the theses and dissertations addressing the topic of "educational psychology and

counseling", which accounted for approximately 45.67%. Research methods had therefore transferred from theoretical analysis to survey methods.

In addition to the analysis of theses and dissertations, projects conducted by researchers were also explored by Chen (1985). He found that it was not until 1972 that research projects began to provide reference to policy decision-making. The topics of research projects mostly focused on "educational system and administration", which counted about 39.40%. Besides, topics of "curriculum and instruction" also occupied a reasonable percentage (34.85%). The survey method dominated the scene, which amounted to about 87.88%.

In sum, a quantitative perspective was prevalent and surveys were widely utilized in past studies. This phenomenon still exists in Taiwan today.

Reflections

Every theory has its underlying assumptions and its applicable subjects. Mistransplantation of theory might cause a misuse of the knowledge system. In the past decades, social scientists in Taiwan who were trained in western countries especially in America, brought back what they learned with little reflection as to its applicability to the R.O.C., and transplanted a great deal of western theories, research frameworks, methodologies and concepts. These not only could not help us explore what we want to know, but also might obscure the facts. A renewed emphasis on cultural identity awakened researchers to this issue. The Chinization of social science has been proposed since 1975 (Yang, 1993). A group of social scientists came together and attempted to develop a Chinese social science. In recent years, recognizing that Chinese people think and behave differently in various geographical areas, "indigenization" in place of "Chinization" has become the new focus for social scientists.

Dominated by the quantitative paradigm for years, researchers in Taiwan have started to awaken from Positivism since the past decade. As Popkewitz (1984) pointed out, the last half century has been the emergence of behavioral science which has come to dominate the cultural outlook of the United States, Australia and, to some extent, Britain. Taiwan was not

an exception. Overdevelopment of instrumental rationality results in the emphasis of fact description and quantitative approach. Thus pedagogy became the technical knowledge of describing "how", not interpreting "why." After an overreliance on statistics, another perspective to inquire about educational problems was proposed. Popkewitz (1984) suggested three paradigms--empirical-analytic, symbolic and critical, the latter two of which opened up exciting and potentially avenues for Taiwan's researchers to reflect on what they have done.

New Waves of Research

In recent years, qualitative research has begun to expand. Most of the studies focus their research on teachers. Teacher-student interaction, teacher socialization, classroom management, teaching methods and styles, and the socialization of prospective teachers are what researchers investigate. In addition, more policy research has appeared. Since the necessity of research providing reference for educational policy is now commonly acknowledged, more and more policy studies have been conducted. Several research centers set up in the Normal Universities and Teacher Colleges shoulder part of the responsibility for policy studies. In the past few years, a great deal of policy studies had been conducted. Part of them, examining the current situation of education, were used to help the Ministry of Education to hold its 7th National Education Conference in 1994. The other studies were conducted to assist the Council on Education Reform to draft its Education Reform Reports. These studies are more or less related to but not directly on school effectiveness and improvement. Few school effectiveness and improvement studies have been conducted, which are needed more when responding to educational reforms and school-based innovations.

CONCLUSIONS

Educational reforms are not uncommon in the educational history of Taiwan, however,

educational reforms in recent years are so profoundly different from those in the past. Several features of this wave of educational reforms deserved attention are that: (1) it has drawn the public's attention; (2) more elites from outside the education profession have participated in the movement; (3) the Council on Education Reform was established to promote reforms at a level beyond the Ministry of Education; and (4) the scope of the reforms is broader and deeper than ever before.

When examining educational development in most countries, the theory of clock's pendulum seems to be applicable. It keeps swinging from left to right. Taiwan has been in the extreme right polar since it overemphasizes academic preparation for higher-level institutions for years. Now, the present wave of educational reforms is aimed at moving toward the left polar with the hope not too left. The main focus therefore is to implement a great deal of measures to lessen the pressures on students, and at the same time to improve or create the conditions for educational change.

REFERENCES

- Aldrich, R. (1990). The evolution of teacher education. In N. J. Graves (Ed.), *Initial teacher education politics and progress*. London: Kogan Page.
- Chen, B. C. (1985). The preliminary investigation of educational research in the past forty

- years in Taiwan, R.O.C.. *China Tribune*, 21(1), 230- 245.
- Council on Education Reform (1996). *The concluding report*. Taipei, Taiwan: Council on Education Reform.
- Fu, W. S. (1991). *Critical heritage and creative development*. Taipei, Taiwan: Dongda.
- Hopkins, D., Ainscow, M, & West, M. (1994). *School improvement in an era of change*. London: Cassell.
- Lin, Y. S. (1989). Step out May Fourth to develop May Fourth. In Z. H. Lee & Y. S. Lin (Eds.), *May Fourth: Diversified reflections*. Taipei, Taiwan: Fongyun.
- Ministry of Education (1994a). *Education in the Republic of China*. Taipei, Taiwan: Bureau of Statistics, Ministry of Education.
- Ministry of Education (1994b). *The Minutes of National Education Conference*. Taipei, Taiwan: Ministry of Education.
- Ministry of Education (1994c). *Education Statistics in the Republic of China*. Taipei, Taiwan: Ministry of Education.
- Ministry of Education (1995). *Education Report of the Republic of China*. Taipei, Taiwan: Ministry of Education.
- Ministry of Education (1997). *Education Statistics in the Republic of China*. Taipei, Taiwan: Ministry of Education.
- Pan, H. L. (1995). *The comparison of teacher education policy and problems between Mainland China and Taiwan*. Paper presented at the Conference of Teacher Education in Taiwan and Mainland China, the Center for Education Research, the National Taiwan Normal University, Taipei, Taiwan.
- Popkewitz, T. S. (1984). *Paradigm and ideology in educational research*. New York: The Falmer Press.
- Roth, R. A. & Pipho, C. (1990). Teacher education standards. In W. R. Houston (Ed.), *Handbook of research on teacher education*. New York: MacMillan.
- Yang, K. S. (1993). Why do we need to have Chinese indigenous Psychology? *Indigenous Psychological Research in Chinese Societies*, 1, 6-88.