

TEACHER CERTIFICATION SYSTEM AND REVISION OF THE EDUCATIONAL PERSONNEL CERTIFICATION LAW (1988) IN JAPAN —REVISION OF THE COURSE OF STUDY (1989) AND PRESERVICE PROGRAM FOR SCIENCE TEACHER—

Atsushi YOSHIDA

(Department of Chemistry)

(Received September 17, 1991)

I. How are National and Local Educational Administration Agencies Organized in Japan ?

(i) Japanese society is centralized. The principal national agency governing education is the Ministry of Education, Science and Culture. Figure 1 shows the administrative organization and teacher education in Japan. As an Administrative organ, it shares responsibilities with the Cabinet and the National Diet in preparing budget estimates and for drafting educational legislation. Most national educational and cultural activities (except those which are under the jurisdiction of other ministries) are under the authority of the Ministry of Education, Science and Culture. All National universities, national museums, and some of the national research institutes are under the jurisdiction of the Ministry of Education, Science and Culture. The Ministry of Education, Science and Culture supervises and assists the activities of many quasi-governmental organization as relating to education.

Locally established public educational and cultural institutions come under the jurisdiction of the prefectural and municipal boards of education. The Ministry of Education, Science and Culture supervises and allocates financial aid to local boards of education, and may require reports on the educational activities of the local boards of education. The Ministry of Education, Science and Culture offers guidance, advice and assistance to the local boards of education, the prefectural boards of education carry out similar functions in relation to the municipal boards of education. As occasion demands, it makes inquiries and gives orders for necessary improvements or corrections to local boards of education.

To the Ministry of Education, there are attached 14 advisory councils, whose members are appointed by the Minister. The Central Council for Education, whose members are appointed by the Minister with the approval of the Cabinet, is the highest

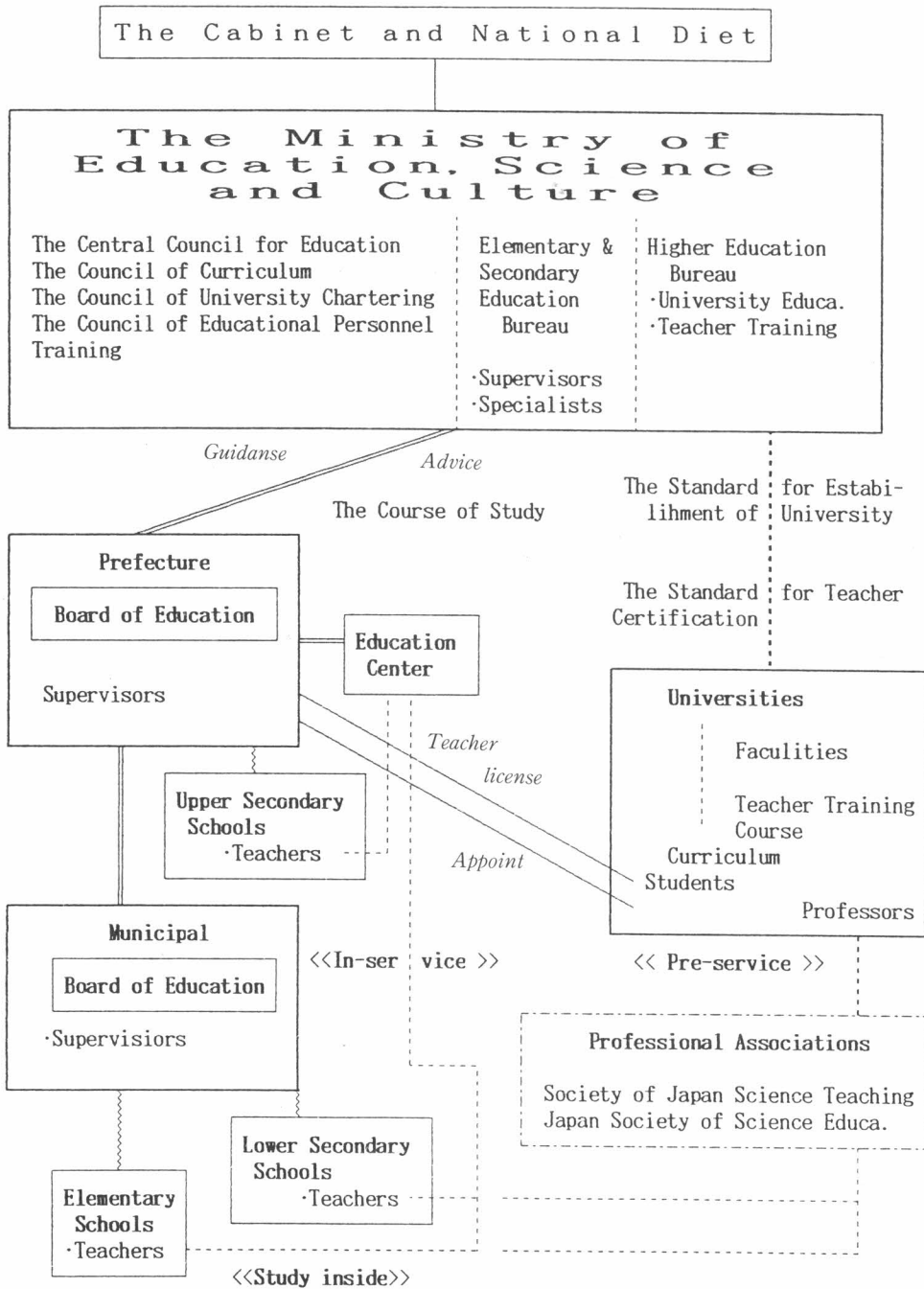


Figure 1. The Administrative Organization and Teacher Education in Japan

advisory organ to the Minister and concerns itself with those matters relating to fundamental policies for education referred to it by the Minister. The concerns of the other councils are indicated by their titles.

(ii) The Council of Curriculum recommends principles of new curriculum of elementary and secondary schools. The Ministry of Education, Science and Culture set up the Course of Study as the standard for curriculum in accordance with which the organization and practice of the curriculum would be conducted by each school. The Course of Study has been revised every ten years or so, in consideration of the development of society and the improvement of education after the World War II. The newest revision of the Course of Study was established in 1989 which would take effect in 1992.

The Ministry of Education may offer necessary guidance, advice and assistance to local boards of education and local education and local educational personnel on curriculum standards, methods and techniques of instruction, guidance and school management, through direct or indirect methods as follows:

- (1) Official notification to prefectural or municipal board of education,
- (2) Supervision of local boards of education and, through local boards, supervision of public elementary and secondary schools,
- (3) Conduct of conferences and workshops on a nation-wide scale for principals, supervisors and teachers,
- (4) Publication of guides, manuals and handbooks for teachers,

A number of supervisors and subject specialists are employed in the Ministry. Supervisors of the Ministry are responsible for elementary and secondary education in general. Subject specialists serve fulltime and their function to conduct research and study on the standards of curriculum for the school level and subject area to which they are assigned, and to give prefectural boards of education advice and assistance on the curriculum. Direct guidance and advice to elementary and lower secondary school teachers are given by the prefectural and municipal boards of education.

The Ministry of Education, Science and Culture, prefectural boards of education, prefectural research centers for education provide opportunities for systematic in-service training for public school teachers, principals, and supervisors. Some of the largest municipalities and educational study groups also hold workshops and study meetings for in-service training. Prefectural research centers are designed and equipped for workshops, which are usually composed of lectures of high quality and seminars related to school administration, curriculum theory, instructional method, and others. In each stage of school education, various kinds of "study" has as its base "study inside school" which ties with daily educational practice. In order to put teachers' intentional and effective study into practice, the roles of prefectural and municipal boards of education are clearly prescribed, and the arrangement of "study system" which is composed of functional combination of those studies is facilitated at present. Universities and educational study groups which are voluntarily organized by

school teachers also hold workshops and study meetings. Some national universities provide in-service program as graduate level for teachers who wish the obtain higher certificate.

(iii) The standard for the establishment of a university is prescribed in the Standards for the Establishment of Universities. On the basis of these standards, the University Chartering Council makes inquiries and deliberations on applications for the establishment of new institutions. All universities and junior colleges come under the jurisdiction of the Ministry of Education, Science and Culture but each university or junior college is governed by its own governing agency.

The provisions of the Educational Personnel Certification Law and other statutes concerned require those studying for regular certificates to obtain college or university credits in courses approved by the Ministry of Education, Science and Culture. In order to obtain a teacher certificate, the students are required to acquire the prescribed number of credits in each subject group: general education subjects, teaching subjects and professional subjects. Teacher certificates are granted by prefectural boards of education. Regular certificates are valid in all prefectures and for life. The details of the teacher certificate are introduced in part III.

Prefectural boards of education appointed teachers of prefectural schools on the basis of the recommendations of prefectural superintendent of education. The superintendent makes his recommendation after an appointment examination. He also takes into consideration the opinion of the principals of school to which a new teacher is to be appointed. In the case of the appointment of municipal school teachers, the prefectural superintendent of education selects teachers to be appointed on the basis of the results of an appointment examination and the recommendation of the municipal board of education, which has been made with due regard to the opinion of the principal of the school to which a new teacher is to be appointed. The appointment examination is in general given in both teaching subjects and professional subjects.

II. How are Curriculum Standards Reformed for the 21st Century in Japan ?

(i) The Course of Study of the 1980's and 1989

The revision of the late 1950's and the 1960's attempted the enrichment of educational content in order to response to the development of science, industry and culture after the the recovery of independence, leading to require an increased amount of and an excessively upgraded level of learning. Thus education from the viewpoint of learners was to be taken up as an important issue; humanizing education widely in diffused secondary education. The 1977-78 revision, therefore, placed the focus of educational goals on encouraging students to develop independent judgment and behavior and correcting the overemphasis on the transmission of ready-made knowl-

edge. Thus, in this version, educational content was selected and school hours were much reduced, in order that a flexible and rich school life might be realized.

Since then, the development of information society and internationalization has given much influence on the consciousness and life style of students. Social changes in these sectors are expected to expand and accelerate. The issue then shall be how education can keep up with these changes.

On the recommendation of the Curriculum Council of December 1987, the Course of Study for Kindergarten, Elementary School, Lower Secondary School, Upper Secondary School were fully revised on March 15, 1989. This revision pursued the principle to lay the foundation of lifelong learning and aimed at the cultivation of independent and well-rounded personalities in charge of the 21st century. The structuring of academic subjects was amended and the content of each subject and number of teaching hours were revised, according to the following guidelines;

- (1) nurturing of a flexible and well-rounded personalities
- (2) nurturing of competency for independent learning
- (3) emphasizing on the basics and promoting of education for developing individual traits
- (4) appreciating culture and tradition and promoting international understanding.

For example, "Life environment studies" was newly established instead of social studies and science for the lower grades (first and second grades) of elementary school. This subject primarily aims to:

- (a) cultivate in the students the ability to adapt and adjust to his environment and society.
- (b) nurture in the students, good habits and breeding.
- (c) enable the students to develop self-consciousness which will make them realize their talents and develop these talents to the fullest for the improvement and betterment of the society where they live.

This revision aimed at the cultivation of skills necessary for students to survive independently in the changing society. The new Course of Study are scheduled to be implemented in the stages from 1990.

(ii) Current Trends in Revision of Curriculum of Science

Fundamental policies of improving science education are as follows:

- (1) having students familiarized themselves with surrounding natural things and phenomena,
- (2) pulling an over emphasis on students' observations and experiments,
- (3) developing of students' abilities for problem solving,
- (4) developing of students' scientific way to viewing and thinking natural and phenomena,
- (5) nurturing students' concern and attitude toward nature.

There must realized according to the development of science and technology,

advancement of information-oriented society and the actual conditions of students.

Science education is not aimed only to teach scientific knowledge to students, but also to develop students' abilities for solving problems, to nurture students' sensitivity to love nature, and to understand natural things and phenomena, as well as to develop students' scientific ideas and process skill. Science education is very important to develop students' personalities. The role of science education to develop students' personalities are as follows:

- (1) students will acquire positive abilities to cope with the changing society,
- (2) student will acquire creative abilities to conduct in daily life.
- (3) student's first hand experiences have to be emphasized, and the five senses of the student will be improved,
- (4) student will acquire abilities to apply various informations,
- (5) student will develop skill for observations and experiments and basic skill in the use of instruments,
- (6) student will nurture a sensitivity to love nature and an attitude of respecting life,
- (7) student will develop their scientific ways of viewing and thinking of natural phenomena and abilities to understanding matters and phenomena in nature.

Using computers must be encouraged as CAI or CAL in science classes. Because, the development of advanced information technology is remarkable, computers and other means of new technology are coming into daily life with amazing speed. In school education also, the promotion of education that can respond to information oriented society is a big pressing issue. School education must cultivate the ability to independently use and handle information for social and professional purposes and thus appreciate the importance of information and its impact on society and people. The advancement of information oriented society, however has caused massive growth in the quantity of information flowing in one direction. Along with it, will be excessive dependence on information and the decrease of first hand experiences because of contact with nature being replaced by indirect experiences via media. Education in response to information oriented society, therefore, ought to be promoted, keeping these negative aspects sufficiently in mind.

Therefore, the percentage of schools especially lower and upper secondary schools, with computers increase in recent years. The Ministry of Education, Science and Culture recommended that students use computers effectively in the case of referring information in the process of observations and experiments, data processing for experiments, measuring and so on.

III. Upgrading the Quality of Teachers and Revision of the Educational Personnel Certification Law

- (i) The success or the failure of school education depends much on the quality of

teachers who are in direct contact with students and who exert the most influence on their character formation. The Ministry of Education, Science and Culture has promoted the improvement of teacher training courses of universities, and has revised the Educational Personnel Certificate Law so that the basics of practical teaching can be learned during the training stage.

(ii) The revision of the Educational Personnel Certification Law was initiated in 1988 which would take effect in 1990 subject to approval. The revision was primarily based on the recommendations made by the Council for Teacher Training in 1987. The objectives for the revision as recommended by the council are as follows:

- (1) To improve the quality of teachers in response to the need for relevance to the new demands of the changing society and of the elementary and secondary school learners of the present and next decades.
- (2) To prepare the teachers for school activities and responsibilities to enable them to carry out the tasks of fully developing the physical and mental aptitudes of the students.
- (3) To inculcate in the teachers' minds the dedication to the thrust of the educational mission.
- (4) To enable the teachers to understand deeply human development.
- (5) To provide mastery of the subject matter.
- (6) To enhance the teaching abilities of teachers by developing their inherent potentials.
- (7) To provide general literacy to would-be teachers.
- (8) In addition, because of the deteriorating sense of values of the new generation students the upgrading of the minimum requirements for would-be teachers who are responsible for the development of students' skills, knowledge, attitudes and values was necessitated.

The students in teacher training courses are required, in addition to the above basic qualification, to acquire the prescribed number of credits in two subjects groups in courses approved by the Ministry of Education, Science and Culture; general education subjects, teaching and specialized subjects. For certificates for teaching in lower and upper secondary schools, the prescribed number of credits in teaching subjects varies with subject area. The minimum number of credits required for teacher certificate for each subject.

Major Subject Studies; Elementary-A greater number of credits for major subjects in the first class elementary teacher certificate is required. At present, 9 subjects are required which is equivalent to 18 credits. The additional subject is called "Life environment studies" which is an integrated social studies and science subject.

Lower secondary-More importance is given to laboratory classes and experimentation in science. Although there is no increase in the minimum number of credits required for science, there is an increase in the number of credits for experiments. The

increase in credit will involve the utilization of computers in science education. Minimum requirements for credits for lecture decreased.

Upper secondary-no major revision was made except that the utilization of computers in science education is required.

Education Related Subjects; The revised law prescribes an increase in the number of credits of education related subjects. The old law required credits in Principles of Education, Educational Psychology and Child Psychology. The increase in credits required by the new law involves the teaching of additional subjects such as:

- (1) Educational Essentials and Objectives. Although the contents of this subject are not yet specified, its objectives of giving total education to students is emphasized.
- (2) Developmental Psychology and the Process of Learning. This is an integration of Educational Psychology and Child Psychology whose main objective is to prepare the teachers to develop the mental and physical facilities of students and help them cope with the problems of dealing with children.
- (3) Educational Management, System and Sociology which will include Sociology of Education and Educational Administration and Management.
- (4) Methodology of Instruction and Techniques which aims to teach the development and usage of audio-visual materials and aids and the use of computers in education.
- (5) Methods of Teaching is required of all students. Elementary school teachers are required 2 credits each for the 9 subjects for a total of 18 credits and secondary school teachers are required 2-3 credits of Methods of Teaching. The revised law requires that the total number of credits of Moral Education and Study of Teaching Materials be equal to 22 credits. This consists of 18 credits of Methods of Teaching, 2 credits of Moral Education and 2 credits of Special Activities.
- (6) Two credits of Guidance and Counseling are required of all students.
- (7) An increment in credit requirement for Teaching Practice is required. The additional credit in all levels is for an extra subject on Guidance for Practice Teaching which aims to orient the students on the objectives and contents of the practice teaching, way of health maintenance during the practice teaching period, lesson planning structures of school lessons, school projects and student evaluation and others. The experienced teachers and other academic personnel in the schools where the student teacher is assigned or the academic adviser of the student teacher in the teacher training school can give the advice. Before and after the teaching practice period, the students are evaluated by the teacher. The student teacher is not required to submit a report.

The curriculum of teacher training courses must be arranged for the Teacher Certification Law (1988). It required only the minimum number of credits, so the contents and methods are depended on each universities. The following are recom-

mended to improve the qualities of teachers:

- (1) There must be a balance between education-related subjects and major subject studies in the minimum requirements for credits for teacher training.
- (2) Elementary teachers' certificate must emphasize education subjects more to enable the would-be teachers to deal with children better by understanding their psychology.
- (3) Teacher training schools and other universities must have standardized pre-service training for teachers.
- (4) Teaching practice hours must be extended and must be uniform in all teacher training schools and universities in terms of content, methodology and structure.
- (5) Opening of more schools for practice teaching. At present, students are permitted to teach in the secondary schools where they graduated and attached schools of teacher training institutions. However, because of the limited number of student-teachers who are accepted, students find it difficult to find practice teaching placement.
- (6) The minimum requirement of 40 credits for major subject studies for junior high school teacher certificates must be increased to 50 or 60 credits. In science education, the number of credits required for each field (Chemistry, Physics, Biology and Earth Science) can be increased to allow the mastery of the subject matter. Graduate thesis requirement depends on a particular university.
- (7) Deloading of the curriculum to allow teachers to manter the subject master and give them more enthusiasm to pursue higher education.
- (8) Teacher training schools should stress the relationship between the major subjects and the education subjects to enable the students to become better teachers who will know how to teach the subject they will later on handle.
- (9) Teacher training schools and non-teacher training universities must train their students on teaching methods and techniques.
- (10) In elementary school teachers training, the relationship among the different subjects must be stressed so that, when the time comes, the teachers can establish this relationship in real classroom situations.
- (11) Professors of teacher training school must cooperatively work with elementary school teachers to be able to gain knowledge of the needs of teachers in carrying-out their activities and responsibilities.
- (12) Teacher training schools must develop a teachers' program that will interrelate major subject studies with education-related subjects and practice teaching.
- (13) Graduate school should play an important role in teacher training. In teacher training universities, graduate studies help the students acquire higher qualification such that they get training also in teacher-related work such as that of school adminiistrators, school personnel and university staff.
- (14) Graduate courses in teacher training schools must be geared towards education

so that subjects such as Curriculum Development, School Administration, Teaching Materials Preparation and Development can be required to prepare students for teaching activities and other related activities as specialists, consultants and supervisors. The graduate courses in teacher training school must develop as the doctor courses to get PH.D.

This Paper was presented at the 39th NSTA (National Science Teachers' Association) National Convention Houston, Texas, March 29, 1991.

References

1. Ministry of Education, Science and Culture (1987): Council for Teacher Training; To Improve Teachers' Qualification and Abilities. (Japanese)
2. Ministry of Education, Science and Culture (1988): The Educational Personnel Certification Law. (Japanese)
3. Ministry of Education, Science and Culture (1990): Japanese Government Policies in Education, Science and Culture 1989; Elementary and Secondary Education in a Changing Society.
4. Committee for Facilitating Research, Japan Association of Universities of Education (1984): Preservice Training; Problems to Improve the System of Teacher Training (Japanese)
5. Committee for Facilitating Research, Japan Association of Education (1984): Teacher Training in Japan.