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Comparison of the Food and Nutrition Curriculum As a Teaching Plan Provided by the Ministry of Education and the Actual Teaching Plan by Teachers in Incheon, Korea

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실과의 식품영양 단원의 교사용 지침서와 실제 수업과의 비교 연구
-인천직할시 공립국민학교를 중심으로-

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본 연구는 교육부에서 의도하는 국민학교 실과 과목의 식품 영양 단원의 지침서 내용과 현장에서의 교사 수업 실태를 교육관련 전문지인 새교육, 새교실, 새수업등에 게재된 현장교사들의 지도안 내용과 인천시내 공립 국민학교 교사 510명과 학생 1,754명을 대상으로 설문조사를 통한 내용을 분석하였는데 그 결과는 다음과 같다.

1. 교사용 지침서에 제시된 교과목표 및 단원 내용과 현장 교사들의 지도안 내용은 완전일치 하였다.

2. 교육부가 제시한 수업시수가 알맞다는 응답이 4학년 88.7%, 5학년 87.4%, 6학원은 87.8%였으나 약 10% 정도의 교사는 식품 영양 단원에 더 시간이 필요하다고 응답하였고, 현재의 시간을 줄여야 한다는 응답도 4학년 0.8%, 5학년 2.6%, 6학년 2.4%나 되었다. 또한 28-38%의 교사가 실과시간을 다른시간으로 활용한 적이 있다고 응답하였으며 3번이상 다른 시간으로 쓴 경우도 4학년 6.5%, 5, 6학년은 11%나 되었다.

3. 교육부가 제시한 교수방법보다 다양한 교수방법이 현장에서 실시되고 있었으나 가장 많이 사용되는 교수방법은 4, 5, 6학년 모두 설명, 발표, 판서, 교과서 읽기 등이었고 실험, 조사, 역할놀이, 토의, 시범 등은 드물게, 필름이나 슬라이드, 카세트 등은 거의 사용하지 않는 것으로 나타났다.

4. 사용된 학습자료로는 교과서, 교사용 지침서, 학습 과제장 등이 주된 것이었으며 그 이외의 자료는 극히 활용도가 미약하였다.

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5. 실험 실습을 위한 실습실은 전혀 갖추고 있지 못한 실정이었으며, 조리 실습은 학생들이 재료와 도구등을 준비(4학년 96.5%, 5학년 96.1%, 6학년 95.7%)하여 실시하고 있는 것으로 나타났다.

INTRODUCTION

Quality education, the goal of any educational institution, should be based on a sound philosophy of education. The philosophy determines the broad goals to which a program is directed and provides a logical justitication for determining what is taught to those who must learn and what is expected from those who have learned. It is concerned not only with what should be taught (content) but also with how this ought to be taught (process). Thus concerned with process as well as content, a philosophy of education provides the direction for the effective teaching of a specified set of knowledge, attitudes, and skills (curriculum) necessary to ensure an adequate educational preparation.

The curriculum of any educational program becomes an essential tool to the transfer of knowledge, skills, values and attitudes matched to the needs and aspirations of a particular society. The process of curriculum development in various countries varies, according to the nature of administrative structure in place. In Korea, curriclum development is highly centralized in the MOE or some similar special institutions. There are developments in Korea which indicate a necessity for regular and systematically evaluating school curriculum (MOE, 1983).

Nutrition education has received considerable attention in recent years. The increased knowledge and interest in nutrituion have contributed to the need for more effective nutrition education programs. Schurch(1982) pointed out that many nutrition education programs have been implemented without evaluation. According to Song(1990), evaluation of the educational school curriculum is very limited in all levels at present and most of the evaluation researches thus far have focused on results rather than the process of educational evaluation.

Practical Arts and Homemaking courses have been developed as the vehicles to determinate information on the subjects of food and nutrition in the elementary school curriculum in Korea. However, available curricular materials for food and nutrition subject appear not to have changed in the last decade. To reduce the effect of teacher bias, textbook and the Teaching Guide Book (TGB) have been prescribed for the elementary school curricular in Korea. However, although the textbook and the TGB on food and nutrition subject in Practical Arts and Homemaking indicate what ought to be taught, the transmission of knowledge depends to a large extent on the teaching skills of the teachers.

This study specifically sought to answer the following objectives: To compare the teaching plan of the food and nutrition subject in the elementary school curriculum in Korea as provided by the MOE with the teaching plans of school teachers.

REVIEW OF RELATED LITERATURE AND STUDIES

Where does nutrition education fit into elementary school curriculum and how should it be taught? According to Autret(1971) who is director of FAO nutrition division, education admittedly it begins at home, but it continues in the classroom, then logically follows the path back to the family, enhanced by learning and experience. This applies to learning in general, as well as to food and nutrition education in particular.

There are some studies on necessity of nutrition education in the school program. In the United States, a study by Wilson and Lamb(1968) showed

that a large group of women accept false beliefs about food, despite the fact that they have completed secondary or university education.

In a similar of the study by FAO, the teaching of nutrition cannot be relegated to one or two hours per week but must be maintained throughtout the plan of studies and reinforced whenever possible.

In the elementary school curriculum, food and nutrition education can make an important contribution to the lives of children if it helps them develop positive attitudes toward self and others. There are a number of contries that have incorporated food and nutrition education into home economics, such as Republic of Korea. Food and nutrition education as a separate subject has been defended by the justification that the pupil should be aware of the existence of this very important subject.

An evaluation study on nutrition education and training program in 1985-86 was conducted by Guerrero and Daniel(1986) in New York. Another an evaluation study of nutrition education curriculum in school was conducted by Levine et.al.(1979). The study was an assessment of high school nutrition education in New Jersey.

Florencio and Rubio(1988) analyze that the current curricula, syllabi, textbooks and other teaching aids used in teacher training institutions(TTI) and primary schools concerning nutrition; the technical expertise of trainers and teachers to teach nutrition and methods used; and identify whether or not tne nutrition education programs in primary schools have resulted in a change of attitude among parents that went to school during the implementation of the Applied Nutrition Program (ANP).

The study by Carver and Lewis(1979) develp a test which was designed to assess the nutrition knowledge of preservice and inservice elementary school teachers.

In Korea, the Practical Arts and Homemaking (PAA) course which includes food and nutrition aims to develop personal characteristics and good attitudes/values through wide and deep practical and experimental exericises by utilizing as teaching strategies actual practice in the field and household practice for practical learning (Kim, 1986). The basic concept of learning in PAH is at the elementary school level, to enable the male and female students to develop basic values and philosophies for healthy individual life.

Jeon and Kim(1990) conducted a study to improve the current curriculum in Korean elementary school's PAH course, which covers industrial fields and home economics. They stated that since these two heterogeneous subjects, industrial arts and home economics, are integrated under the PAH course, the teaching of these courses cannot be specialized. More than one half of the teachers agreed in dividing the teaching of PAH courses.

Nutritional knowledge and food habits of various groups in Korea were the concern of several surveys conducted. Lee and Hong(1990) pointed out that PAH courses should be reorganized to contribute to local and rural development. The curricular should be changed into more effective and practical contents related with students' daily life, based on various characters of different local areas and their society.

There are plenty of studies or researches about food related topics and nutrition education, but it is not exactly about school curriculum evaluation. Nutrition education has been defined in various ways, but all these definitions refer to a communication system that teachers people to make better use of available food resources (Zeitlin et al., 1981).

METHODOLOGY

This study used the descriptive method with the questionnaire and teachers' syllabi as the main instrument in gathering data and information to evaluate the TGB against the implementation of food and nutrition subject in the elementary school curriculum in Incheon, Korea. And some materials such as New Classroom Teaching (Saekyosil), New Class Activities (Saesueup) and Educational Materials (Kyoik zaryo) published by the Korean Teachers

Association/Korean Educational Development Institute were used beside teachers' syllabi. And also two sets of questionnaires were used for the study. One set was for the teachers who were teaching food and nutrition subject in grades 4, 5, and 6. The other set was for stuents taking food and nutrition subject in grades 4, 5, and 6. A preliminary test for item analysis was conducted to determine the validity of items in the questionnnaire.

The sample subjects were 1,754 male and female student respondents from 12 schools and 510 teachers included 180 advisers who were teaching food and nutrition in grades 4, 5, and 6 from 71 schools out of 95 public elementary schools in Incheon city.

RESULTS

The results and findings of this study were:

Objectives of Food and Nutrition Curriuclum

In the comparison of the food and nutrition curriculum as a teaching plan provided by the MOE and the actual teaching plan by teachers, it showed that objectives and content areas were exactly the same as followings:

1. The aims of food and nutrition subject is as follows: (1) to arouse interest in one's own nutrition and that of one's family; (2) to impart basic knowledge on food and nutrition; (3) to improve skills on food sanitation, adequate food choice, measurement, meal planning, and simple cooking; and (4) to improve working habits and table manners for gatherings and parties.
2. The overall objectives of the subject are: (1) to create good food habits; (2) to promote cooking cooperatives or measures which may be helpful in learning the subject of food and nutrition; and (3) to project the activities and knowledge of food and nutrition in the home and the community.
3. Specifically, the objectives of food and nutrition subject for grade 4 are: (1) to identify functions of nutrients which are related to growth; (2) to determine individual RDA; (3) to analyze problems of food and sanitation; (4) to analyze the proper preparation of beverage and fruit; and (5) to practice good manners and right conduct after eating. Objectives for grade 5 are: (1) to apprectiate good gromming during food preparation; (2) to analyze various measuring tools and their usage; (3) to identify methods of using cooking fuel and tools; (4) to explain proper food selection and utilization; and (5) to appropriate mode of cooking for particular dishes. Objectives for grade 6 are; (1) to prepare for appropriate invitations for meetings; (2) to identify the proper attitude when invited and visited; (3) to identify recreational activities during meetings; (4) to explain the steps in the preparation of tea parties; and (5) to analyze proper table setting for tea parties.

Time Allotment

In actual teaching, time allotment was adequate according to 88.7% (group 4), 87.4% (gr. 5) and 87.8% (gr. 6) teachers. However, approximately 10 % of teachers suggested more time in teaching food and nutrition subject (Table 1). Specifically, the teacher's sex and civil status were independent of the teachers' assessment of the time given to food and nutrition. However, more Teachers College graduates and teachers who attended Masters courses in Graduate School expressed need for more time in teaching food and nutrition subject ($p<.05$). Similarly, grade 4 teachers with 11−15 years experience and grade 5 and 6 teachers with 4−10 years experience suggested more time in teaching food and nutrition subject ($p<.05$). Few teachers attended in−service training course and seminar/workshop and only few expressed need for increased time allotment ($p<.05$). There were no significant relationships between time allotment in teaching food and nutrition subject in grade 4 and any of the independent variables. In grade 5, there were significant relationships between time allotment and inservice training and attendance of seminar/workshop ($p<.05$). In grade

Table 1. Teachers' Comments About Adequacy of Time Allotment for Food and Nutrition Subject by Grade Levels

Degree of Time allotment	Grade 4		Grade 5		Grade 6	
	Frequency	%	Frequency	%	Frequency	%
Increase Time	61	10.5	58	10.0	58	9.8
1 hour	1	1.6	4	6.9		
2 hours	39	63.9	22	37.9	36	62.1
3 hours	11	18.0	19	32.8	14	24.1
more than 4 hours	10	16.4	15	22.4	8	13.8
Adequate	516	88.7	505	87.4	522	87.8
Decrease Time	5	0.8	15	2.6	14	2.4
1 hour	1	20.0	4	26.7		
2 hours	3	60.0	9	60.0	11	78.6
3 hours	1	20.0	2	13.3	3	21.4
Total	582	100.0	578	100.0	594	100.0

Table 2. Utilization of Class Period for Food and Nutrition for Other Activities/Subjects

Extent F & N Class Utilized for Other Subject	Grade 4		Grade 5		Grade 6	
	Frequency	%	Frequency	%	Frequency	%
Yes	49	28.8	69	38.8	58	35.8
1 Time	10	5.9	10	5.6	5	3.1
2 Times	23	13.5	35	19.7	33	20.4
3 Times	11	6.5	21	11.8	18	11.1
4 Times	5	3.0	3	1.7	2	1.2
No	121	71.2	109	61.2	104	64.2
Total	170	100.0	178	100.0	162	100.0

6, there were relationships between time allotment and inservice training ($p<.05$).

There were times when teachers utilizeds the class period for food and nutrition for other activities or other subjects (Table 2). The 28 to 38 percent of the teachers who use the class for other purposes gave several reasons for doing this. The first reason was to teach academic subjects like mathematics and science so students get higher scores in their testing and because time a allotment for academic courses was not sufficient. The second reason was to prepare for school activities such as sports festival or music contest.

Majority of teachers(71.2% of grade 4, 61.2% of gr. 5 and 64.2% of gr. 6) said they did not utilize the food and nutrition subject period for other activities or other subject.

Strategies Used in the Actual Teaching of F & N Subject

Teachers used various strategies in the actual teaching of food and nutrition subject (Table 3).

The most used teaching strategies were lectures, reporting, boardwork, and reading in all grade levels. The results of t-test (Table abridged) revealed significant differences ($p<.05$) between male and female teachers in their use of discussion, film strips /slides, and cassette tapes/records in teaching food and nutrition subject in grades 4, 5, and 6. Male teachers used more these teaching strategies than fe

Table 3. Strategies Used in the Actual Teaching of Food and Nutrition in Grades 4, 5, and 6

	Actual Teaching Strategies	Mean Grade 4 (N=170)	Grade 5 (N=178)	Grade 6 (N=162)
1	Lectures	3.794	3.758	3.728
2	Reporting	3.435	3.393	3.438
3	Boardwork	3.288	3.270	3.241
4	Reading	3.235	3.169	3.191
5	Laboratory Work	3.088	2.989	3.130
6	Experimentation	2.900	2.809	2.969
7	Surverys	2.806	2.730	2.784
8	Role Playing	2.800	2.640	2.753
9	Discussion	2.771	2.590	2.716
10	Demonstration	2.671	2.567	2.611
11	Class Exercise	2.635	2.478	2.512
12	T.V.	2.071	2.129	2.080
13	Film Strips/Slides	1.865	1.882	1.914
14	Cassette Tapes/Records	1.859	1.854	1.907

* Means from Five-Point Likert-Type Scale such as
(1) Never (2) Seldom (3) Sometimes (4) Oftern (5) Always

male teachers. Compared to single teachers, married teachers used more demonstration, role playing, and discussion ($p<.001$), experimentation ($p<.01$) was and cassette tapes/records ($p<.05$). Teachers who did not attend in-service training used reading more ($p<.001$) while there was no findings in teachers who attended seminar/workshop because of too small samples. The results of one-way ANOVA revealed significant differences among different groups of teachers in their use of lecture, class exercise and discussion at the $p<.05$ level, demonstration and role playing ($p<.01$), and use of film strips/slides and cassette tapes/records ($0<.001$). For example, teachers in the 40-49 age group used demonstration more than those in the 30-39 age group while those in the 40-49 and the 30-39 age groups used role playing more than the 20-29 age group. The results of one-way ANOVA revealed significant differences in the use of role playing ($p<.05$) demonstration and discussion ($0<.01$) and film strips/slides, cassette tapes/records, and T.V. ($p<.001$) by educational background of teachers. For example, two year Teachers College graduates used more demonstration and role playing ($p<.05$) than 4 year Teachers College graduates while teachers who finished teachers Training course used more film strips/slides and cassette tapes/records than 4-year College graduates. Teachers who attended and finished Master course used more T.V. than those who finished 2-year Teachers College or 4-year Teachers College. Based on teaching experiences in elementary school, the results of one-way ANOVA revealed significant differences in the use of demonstration, role playing and experimentation ($p<.01$) and film strips/slides, cassette tapes/records, and T.V. ($p<.001$). Teachers who had 11-15 years experiences used more experimentation than teachers who had 4-10 years experience while teachers who had 21-25 years teaching experience used more film strips/slides and cassette tapes/records than teachers who had 4-10 years teaching experience in teaching food and nutrition subject. Teachers who were male, married, attended in-service training, over 40 years old, finished 2 year Teachers College, and had over 16 years teaching experience used more demonstration, role playing, experimentation, film strips/slides and

Table 4. Resource Materials Used in the Actual Teaching of Food and Nutrition in Grades 4, 5, and 6

Resources Materials Used in Actual Teaching	Mean		
	Grade 4 (N=170)	Grade 5 (N=178)	Grade 6 (N=162)
1 Textbook	4.447	4.433	4.414
2 Student's Work book	4.276	4.264	4.111
3 Teaching Guide book(TGB)	4.229	4.028	4.025
4 Other Related Materials (Newspaper, magazine)	2.576	2.596	2.648
5 Item Exercise book	2.553	2.590	2.506
6 Teaching Materials provided by the MOE	2.524	2.421	2.438
7 Own Syllabi	2.441	2.365	2.370
8 Other Teacher's Syllabi	1.918	1.893	1.840

cassette tapes/records in teaching food nutrition subject than other teachers (Table abridged).

Resource Materials for Teaching Food and Nutrition Subject

The most commonly used resource materials were text book, student's work book, and TGB in all grade levels (Table 4).

The results of t-test revealed differences between male and female teachers in their use of item exercise book ($p<.05$).

Female teachers used more it than male teachers. Married teachers used more other teacher's syllabi than single teachers ($p<.05$). Teachers who attended in-service training related to food and nutrition subject used more own syllabi than teachers one-way ANOVA revealed significant differences on the use of other teacher's syllabi ($p<.05$) and teaching materials provided by the MOE ($p<.001$). Those in 40-49 age group used more other teacher's syllabi and teaching materials provided by the MOE than 20-29 age group teachers. Use of other teacher's syllabi and teaching materials provided by the MOE was significantly different at the $p<.05$ level by educational background. However, it was not tested in the Scheffé Procedure Range Test because of small sample teachers who use of other teacher's syllabi and teaching materials provided by the MOE. There was a significant difference at the $p<.01$ level in the use of text book based on teaching experience in elementary schools. Teachers who had over 26 years used more text book than teachers who had 21-25 years experiences (Table abridged). Female teachers used more item exercise book than male teachers while married teachers used more other teacher's syllabi than single teachers. Teachers who had attended in-service training used more their own syllabi than teachers who did not attend in-service training course. On the other hand, teachers who had over 26 years teaching experience used more text book than teachers who had less teaching experience. Teachers in the 40-49 age group used more other teacher's syllabi and teaching materials provided by the MOE than teachers in the other age groups (Table abridged).

Presence of Laboratory Cooking Room

Most public elementary schools did not have laboratory room in Incheon, Korea. Ten out of the twelve sampled schools had no laboratory cooking room. The other two schools had cooking rooms but those were for school lunch programs, not for class laboratory activities.

Facilities for Experimental Class Activities

The most students bring their own materials for experimental class activities (Table 5).

Table 5. Facilities for Experimental Class Activities by Grade Levels

Experimental Class Activities	Grade 4		Grade 5		Grade 6	
	Frequency	%	Frequency	%	Frequency	%
1. Use school facilities and funds for whole class activities.	1	0.6	3	1.7		
2. Students bring some tools and ingredients for class activities.	164	96.5	171	96.1	155	95.7
3. Can not have experimental class activities because of lack of facilities and funds.	4	2.4	4	2.2	6	3.7
4. No answer	1	0.6			1	0.6
Total	170		178		162	

CONCLUSIONS AND RECOMMENDATIONS

Since PAH course has not been considered as an academic course, this should be given importance in the total spectrum of the elementary curriculum since food and nutrition is essential to the growth and development of school children especially at the lower grade levels. Educational planners, policy makers, and school administrators must give added emphasis to PAH courses by including it as one of the important subject in the elementary curriculum. The course should be given additional units in Teacher Colleges. More male teachers should be motivated to enroll in food and nutrition courses.

Food and Nutrition Curriculum

1. Contents of the subject matter should be related to new trends/topics interesting to students in each grade level.
2. Time allotment for experimental class activities on food and nutrition is necessary to allow teachers to use varied approaches to make learning more experimental.
3. Strategies for teaching will have to be reviewed/enriched.
4. The existing resource materials like TGB and student Work Books have to be updated in content, strategies and evaluation of students activities.

Teacher Training

Improve the teacher's in-service training curriculum to add more courses on food and nutrition. Proper skills and attitudes should be encouraged to make them effective and efficient teachers in this area.

Resources/Facilities

1. Infrastructure such as laboratories should be provided in each school offering home economics.
2. Adequate resources/facilities should be given to experimental class activities.
3. Work Books should be developed to link up school activities and parents participation.

BIBLIOGRAPHY

Carver, Leslee R. and Lewis Kathleen J. "A Nutrition Knowledge Test for Elementary School Teachers." Tempe: Title Ⅶ Nutrition Project for the Elderly. in *Journal of Nutrition Education*. Vol. 11, No. 2, 1979. pp. 68-71.

Florencio, C.A. and Rubio, D.Q. "Nutrition Education in Teacher Training Institutions and Elementary Schools" Manila: Department of Education, Culture and Soports. School Health Nutrition Center, 1988.

Guerrero, F and Daniel, M. "Nutrition Education and Training Program 1985-86. Final Report." New York: New York City Board of Education, 1986.

Jeon, J.H. and Kim, Y.M. "A Basic Study on the Education of Home Economics in the Elementary School." *Journal of Home Economics Education in Korea.* Vol. 1, No. 1, 1990. pp.87－99.

Lee, K.C. and Hong, J.U. "A Study on the Developmental Direction and Changes of Curriculum toward the Practical Arts and Homemaking." *Journal of Saemaul Educational Research in Chuncheon Teachers College.* Vol. 3, 1990. pp 53－80.

Levine, Renee Rudolph et. al. "An Assessment of High School Nutrition Education." *Journal of Nutrition Education.* Vol. 11, No. 3, July-SEptember, 1979. pp. 124－126.

Ministry of Education *Education in Korea.* Seoul: The Ministry of Education Publishing, 1983.

Ministry of Education *Practical Arts and Homemaking for Grades 4, 5, and 6.* Seoul: National Textbook Compaby, 1990.

Ministry of Education *Student Workbook of Practical Arts and Homemaking for Grades 4, 5, and 6.* Seoul: National Textbook Company, 1990.

Ministry of Education *Teaching Guide Book of Practical Arts and Homemaking for Grades 4, 5, and 6.* Seoul: National Textbook company, 1991.

Schurch, B. *Evaluation of Nutrition Education in third World Communities.* A Nestle Foundation Workshop Lutry/Lausanne, September 16th and 17th, 1982. Hans Huber Publishers, Bern Stuttgart Vienna, 1983.

Song, I.S. *Current Status Analysis on the Educational Evaluation Practice by the School of Various Levels.* Seoul: National Institute of Educational Evaluation, 1990.

Wilson, H.R. and Lamb, M.W. "Food Beliefs as Related to Ecological Factors in Women." *Journal of Home Economics,* Vol. 60(2), 1968.