EXPANSION OF SCHOOL FEEDING AND NUTRITION EDUCATION PROGRAMS : AN OVERVIEW

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INTRODUCTION

Educational institutions can and should intervene to improve the health and nutritional status of school-age children. The very success of survival programs for underfive children, as indicated by significant reductions in child mortality rates, has brought a new challenge-that of improving the quality of life of the survivors. increasing access to primary education has opened the doors to more children from marginal communities to be included. And it is in these groups where the risk for malnutrition is highest.

There is an assumption that older children are healthier than the very young. But there are data showing that school-age children are not, in fact, better than preschool children. National survey data from the Philippines (FNRI, 1995 and 1997) indicate higher prevalences of stunting, wasting and iron-deficiency anemia among schoolers compared to preschoolers(Table 1).

Over the last two decades, there has been growing evidence on the adverse impact of malnutrition and poor health on learning. Table 2 is a summary of the strength of the relationships between nutritional and disease conditions and educational outcome variables. According to Pollitt (1990) the nutritional and disease conditions which have been reviewed are powerful risk factors in connection with school aptitudes, operationally defined as the time it takes a child to learn or master a particular task, holding other conditions constant. Intelligence quotient (IQ) is used as the closest approximation of aptitude. The evidence on enrollment and absenteeism is not as robust as that on aptitudes.

Table 1. Nutritional Status of Filipino Children

Condition	Preschoolers (0-5y) %	Schoolers (6-10y) %
Underweight		
1989-90	9.8	8.5
1993	8.2	7.6
1996	8.4	7.4
Stunted		
1989-90	6.5	6.5
1993	5.4	5.7
1996	5.1	5.5
Wasted		
1989-90	4.6	6.9
1993	5.9	7.8
1996	4.6	6.6
Anemic	(1-6y)	(7-12y)
1987	38.7	41.2
1993	26.7	30.8

(FNRI Reports 1995 and 1997)

Table 2. Strength of the relationships between nutritional & disease conditions & educational outcome

	Aptitudes	Enrollment	Absenteeism
PEM*	+++	++	N.R.
IDA**	+++	+	N.R.
IDD***	+++	++	N.R.
Hunger	++	N.R.	N.A.
I.P.****	+++	N.A.	++
Schistosomiasis	++	N.A.	N.A.
Lead	+++	N.A.	N.R.

* Protein Energy Malnutrition (PEM) **Iron Deficiency Anemia (IDA)
*** Iodine Deficiency Disorders (IDD) ****Intestinal Parasites (IP)
(Pollitt E, 1990).

SCHOOL FEEDING PROGRAMS

Rationale

Feeding programs and nutrition education are by far the most common nutrition interventions aimed at school-age children. As indicated in Figure 1, at the very least, feeding programs are expected to alleviate hunger, particularly of children who go to school without eating. Other related expectations are increased food intake, improved nutrient content of the diet and better nutritional status of the beneficiaries. Some schools use feeding programs for nutrition education and to teach health related practices (such as washing hands) and certain values (such as cooperation and gratitude). See Figure 1.

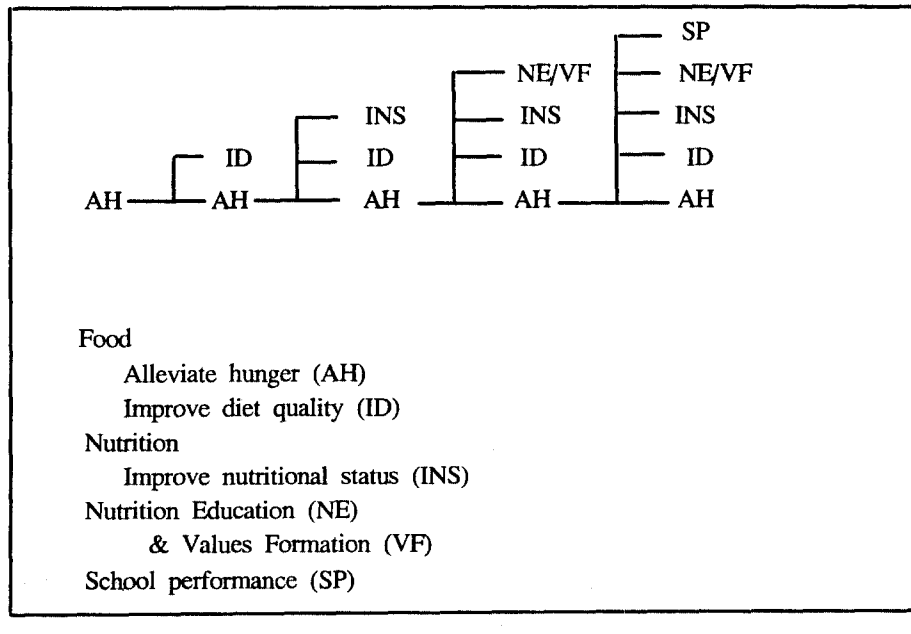

Figure 1. WHY SCHOOL FEEDING PROGRAM?

The justification for school-based feeding programs has moved beyond food and nutrition to consider educational gains. As shown in Figure 2, the education-based

rationale is to improve enrollment and attendance, school related behavior, cognitive functions and ultimately, educational performance of the pupils. There is a battery of cognitive tests to assess specific cognitive processes. Two examples are discrimination learning (color and form) and oddity learning (stimuli presented in an array were non-repeated, repeated once, twice and thrice). Educational performance is assessed by standard achievement tests used locally.

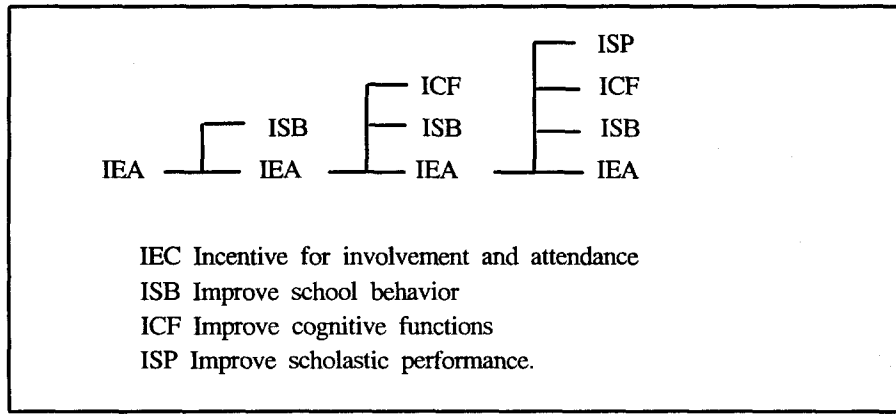

Figure 2. NUTRITION AND LEARNING

In his review of the literature on the effects of breakfast on cognition and school performance, Pollitt (1995) concluded that brain function is sensitive to short-term variations in availability of nutrient supplies, particularly for at-risk 9 to 11 year old for whom omission of breakfast alters speed and accuracy of information retrieval and working memory. Furthermore, in populations where children are nutritionally at risk, availability of breakfast may make it possible for a child to be well-nourished over the long term and may prevent or reverse nutrient deficiencies that affect cognition. Moreover, Pollitt says that studies in Peru and Jamaica confirmed what is generally believed to be an advantage of school feeding programs: they increase the attendance rate of children.

Going back to the nutritional objectives of school feeding programs, the changing nutritional situation in many countries has made it necessary to broaden the program's concerns (Figure 3). In addition to protein energy malnutrition are

micronutrient deficiencies, particularly in iron, vitamin A and iodine. Moreover, in some countries problems of nutrient deficits coexist with problems of dietary excessess which had been linked to obesity and chronic degenerative diseases. In Singapore the prevalence of obesity among school children in 1992 reached 15% (Tan and Ling, 1997).

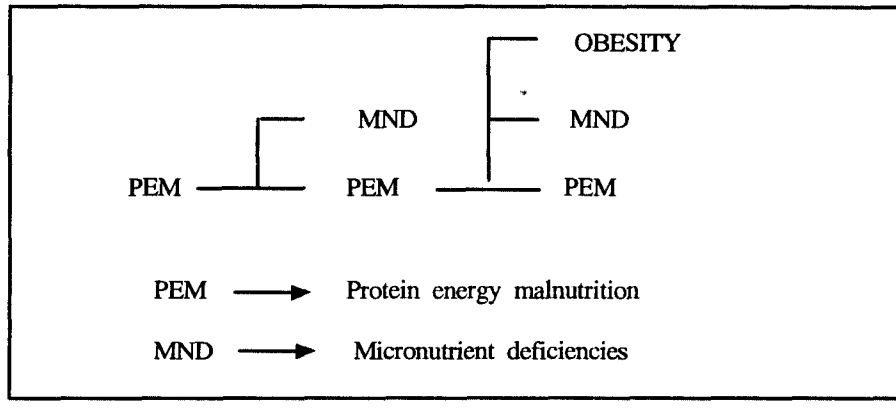

Figure 3. NUTRITION CONCERNS OF SCHOOL FEEDING PROGRAMS

Design/Implementation

School feeding programs range from a piece of bread or a glass of milk to a meal that is designed to provide a certain percentage of the pupil's nutrient requirements. The on-site feeding may be at breakfast, mid-day or at lunch and is the task of school teachers. The food comes from different sources, both local and foreign. Program beneficiaries are usually undernourished or at-risk children in the early grades.

There are many variations to the above description. In the philippines, the milk feeding program is open to all Grade 1 pupils in selected schools, regardless of the children's nutritional status (DECS). In Brazil, the school-lunch program is designed to benefit schoolchildren from the preschool level up to 14 years of age (Dall' Acqua, 1991). In Indonesia, the village school feeding program requires that all

government-purchased foods be locally grown (Berg, 1997). In the United States, a state government terminated its 25-year old program of centrally planned and purchased lunches for the public schools in the state and hired private contractors to take over the program (Rosso and marek, 1996). In Peru (Jacoby et al, 1998), the ready-to-eat breakfast consisting of cake and an instant milk-like beverage provides 5 to 10 year old schoolchildren with 30% to 70% of their daily energy and protein requirements, respectively: 100 of their daily iron needs: and 60% of the recommended dietary allowances for most other vitamins and minerals. In Brunei (Sian, 1997) because of the increasing prevalence of obesity and hypercholesterolemia in school children, the school feeding schrme emphasizes more variety fo foods and less sugars, fats and salt.

Table 3. AGENDA FOR NUTRITIONAL IMPROVEMENT OF SCHOOL CHILDREN(DECS MEMO NO.498, 1997)

School Feeding Program
Feeding coordinator
Parents scheduling
Canteen proceeds
Use of iodized salt
School Canteens
Food Porduction
Nutrition Education
Weighing
Deworming

In the Philippines, official guidelines for nutritional improvement (DECS, 1997) include the following: school feeding, food production, nutritional education, deworming and weighing(Table 3). In addition, school canteens are encouraged to sell healthy and nutritious foods (such as fresh fruits, root crops, native delicacies and milk) and to refrain from selling empty-calorie foods (such as carbonated beverages

and air-filled cereal products like chippies). For the school-feeding program, there is a designated feeding coordinator and parents of beneficiaries are scheduled to assist in the food preparation and service. Iodized salt is used in preparing foods. Some support for the feeding program come from the income generated by school canteens.

Evaluation

There is worldwide experience in school-based feeding programs but in both developed and developing countries most of them are implemented without formal evaluation. We need to determine both level of operational efficiency and nature and extent of effectiveness of such programs.

The three most frequently cited objectives for implementing school feeding programs are better nutrition, increases in enrollment and attendance, and improvement in school behavior and performance. There are other concerns worth looking into; gender is one. Rosso and Marek (1996) cited a school feeding program in Ghana that has been explicity designed to have a disproportionate effect on the school enrollment of girls. School girls are given a take-home ration in addition to the meal at school.

NUTRITION EDUCATION

Nutriton education is undertaken in schools in many ways. The formal approach is teaching nutrition in the classroom, often by integrating the subject matter in classes such as home economics, physical education, health, language or mathematics. The extra-curricular activities such as gardening and girl/boy scouting. School canteens and feeding programs are referred to as the laboratories of nutrition education. But even today the opportunities for nutrition education in these extra-curricular activities still have to be fully appreciated and used. Moreover much work remains to be done in the integration and synchronization of both formal and informal means for teaching nutrition in schools.

The object of, and approach to, nutrition education have undergone modifications

over the years. A few of the movements are shown in Figure 3. Early efforts in nutrition education focused on primary school children. While such efforts are continuing, attention is increasingly being given to "before and beyond the primary grades." Formal education today starts at an earlier age, and it is very important that children learn early in life about good nutrition and how to choose healthy foods because of the long term impact of what in learned during the first decade of life. Moreover, young children are often targeted by food advertisers to eat certain products. Like preschools, secondary schools need a strong health and nutrition education program considering the complex health and nutrition concerns during the adolescent period and the intergenerational effects of poor health and nutrition in adolescent females (Florencio, 1998)

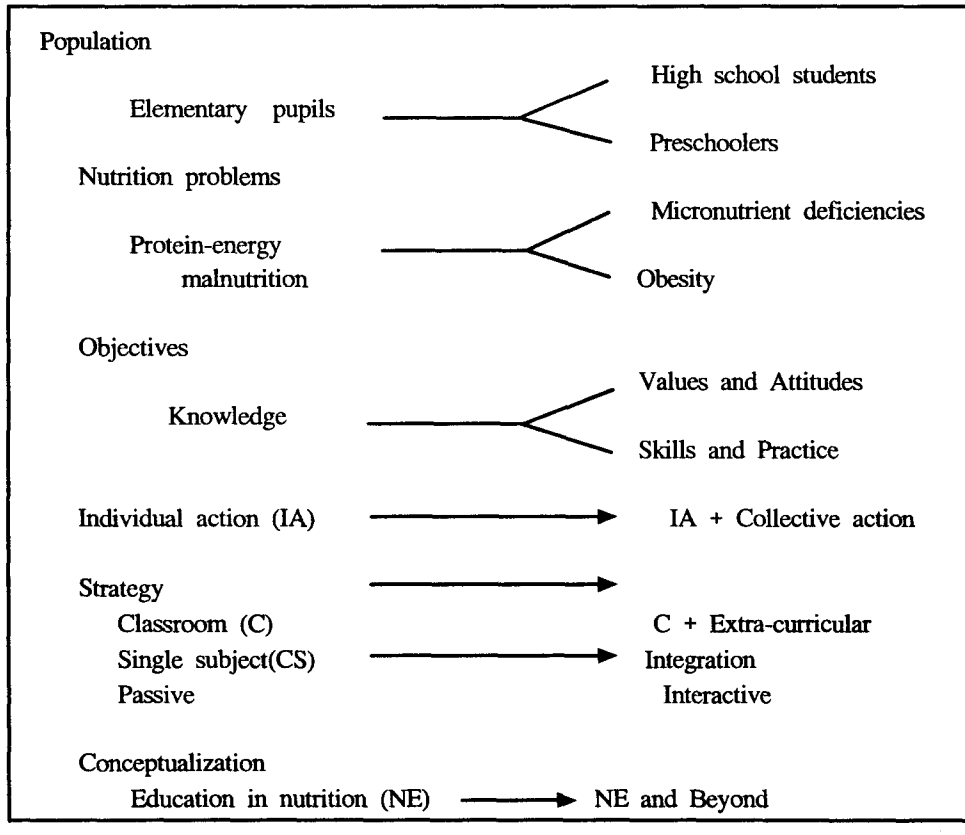

Figure 4. SOME CHANGES IN APPROACH TO NUTRITION EDUCATION IN SCHOOLS

The changing nutrition situation in many countries and the emerging patterns of problems of nutrient deficits coexisting with problems of nutrient excess have made the teaching of nutrition more complicated. The concern is not simply to teach the children to eat regularly and adequately but to choose foods carefully to reduce the risk of diet-related degenerative diseases. Two examples are cited. Chang and Contento (1997) conducted a 15-week fat reduction curriculum for fifth graders in Taiwan as part of required after-school enrichment classes. The curriculum emphasized analyzing food advertisements and valuing traditional low-fat Chinese foods. New Zealand has a National Heart Foundation School Food Programme (Thomson and Govan, n. d.) for primary, secondary and intermediate schools. A Heartbeat Award is given to schools who meet specified criteria on food choices, smoke-free environment and school hygiene. For example, school food services should actively take steps to encourage students to eat a wide variety of foods and to discourage the consumption of foods which are high in fat, sugar and salt.

The teaching of nutrition must necessarily provide a strong knowledge base. But this is not sufficient. To bring about improved food habits requires the development of better attitude and skills and the availability of food and food-related resources. A directional change in the objective of nutrition education has been emerging; there is a shift in focus from individual action to collective action. By collective action is meant students working together to act not only on common nutrition problems but on the factors that bring them about. This requires that teachers go beyond teaching factual information about nutrition and guide students to explore social, political, cultural and other influences on their food choices and nutrition condition. By collective action is also meant the involvement not only of teachers and pupils but also of school administrators and the building of coalitions with families, agencies and the larger community.

Different teaching-learning strategies are employed for education in nutrition. And they have been the subject of many reports and studies (Contento, et al., 1995). Among the elements identified as contributing to the effectiveness of nutrition education for preschool and school-aged children are the following: involvement of

parents/ families; behaviorally focused approach; the use of developmentally appropriate learning experiences and materials; activity-based teaching strategies; food-based activities; educational strategies that are derived from appropriate theory and research; and provision of adequate time, intensity and materials. Moreover, effective nutrition education includes intervening in the school environment and interventions in the larger community. These factors are not new. Many of them have been identified and elaborated on, for example by the highly successful FAO publications: Learning Better Nutrition by Jean Ritchie in 1967 and Food and Nutrition Education in the Primary School by Lydia de Esquef in 1971. The electronic age has made even wider the choice of tools and methods and use of interactive approaches. And many factors influence choice. But a final determination as to the merit of the chosen tools and techniques rests on whether the objectives set were met.

Teaching nutrition can be enriched by moving from individual orientation to social orientation (Eide, 1982). This means examining influences on food patterns and in patterns of access to food. Concern for practical action should be accompanied by a careful examination of the situation or the setting in which the nutrition problems occur. An obsession with immediately addressing a perceived nutrition problem and the absence of thoughtful analysis could lead to quick-fixes. Magic-bullet type approaches have their appropriate use, but the base of an educational approach to nutrition should be Food First. Nutrition education is first and foremost food education.

Feeding programs and nutrition education programs in schools are mutually reinforcing; the former serve as laboratories for the latter while the latter are made real and vivid through the former. The two do not always appear together but in time the merit of and integration becomes evident.

More and more, school food service and education are viewed as components of a comprehensive school health program (CSHP). The CDC (1996) issued Guidelines for School Health Programs to Promote Lifelong Healthy Eating(Table 4). The

Guidelines include the following: adopt a coordinated school nutrition policy that promotes healthy eating through classroom lessons and a supportive school environment; implement nutrition education from preschool through secondary school as part of a sequential, comprehensive school health education curriculum; provide nutrition education through developmentally appropriate, culturally relevant, participatory activities; coordinate school food service with other components of the CSHP to reinforce messages on healthy eating; provide staff involved in nutrition education with adequate preservice and on-going in service training; involve family and community in supporting and reinforcing nutrition education; and regularly evaluate the effectiveness of the school health program in promoting healthy eating, and change the program as appropriate to increase its effectiveness.

Table 4. RECOMMENDATIONS FOR SCHOOL HEALTH PROGRAMS PROMOTING HEALTHY EATING

1. Policy
2. Curriculum for nutrition education
3. Instruction for students
4. Integration of school food service and nutrition education
5. Training for school staff
6. Family and community involvement
7. Program evaluation

(U.S DHHS, 1996)

In both nutrition education and feeding in schools, the traditional approach is teacher to pupil. A more interactive, feedbacking scheme has emerged with pupils assuming an increasingly active role. The circle of relationships has widened to include other school staff, families and the community. The curriculum contains nutrition related activities which involve children working with their families; families are involved in making decisions and carrying out nutrition activities; local groups provide services; and the school in turn collaborates in health / nutrition initiatives with families and communities. The population of school-age children and youth has

grown tremendously in recent years and nutrition problems have become more complex; schools in and by themselves cannot address this situation adequately.

Through the years, school feeding and nutrition education have undergone many modifications as a result of developments in education, technology, and food; transitions in nutrition problems and objectives; research findings; and changes in social institutions. Adjustments will have to be made continually if the two programs are to be relevant and effective.

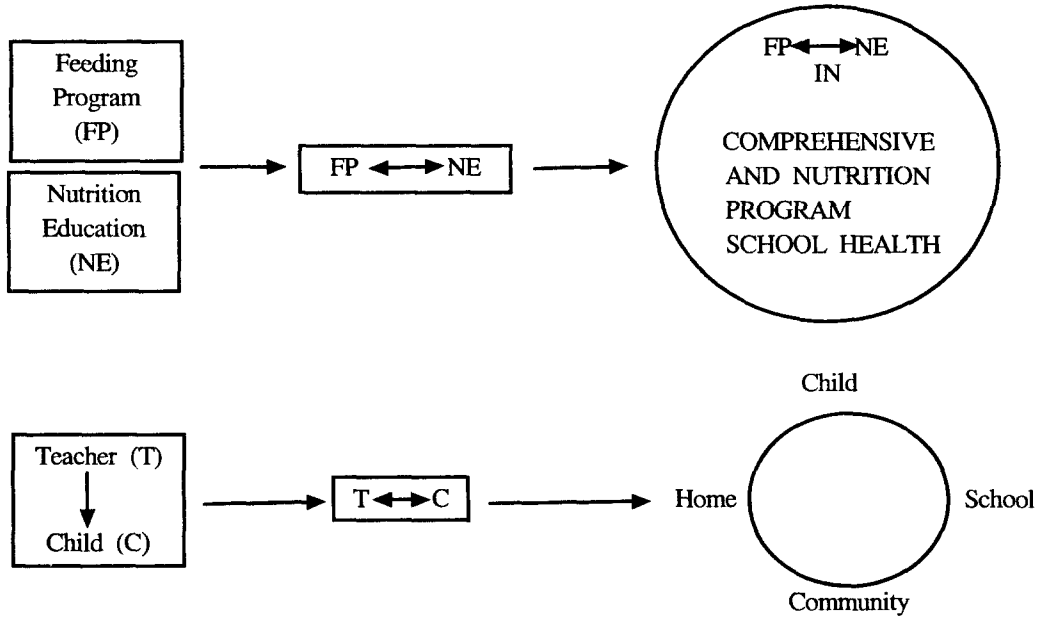

Figure 5. LOCALE OF SCHOOL FEEDING AND NUTRITION EDUCATION

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