

World Education Forum

Dakar, Senegal
26-28 April 2000

Education for All
2000 Assessment



T H E M A T I C S T U D I E S

School Health and Nutrition



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Co-ordinated by World Health Organization

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Acronyms

ADEA	Association for the Development of Education in Africa
AFRO	WHO Regional Office for Africa
AIDS	Acquired immune deficiency syndrome
ALC	Active learning capacity
CAPT	Northeast Center for the Application of Prevention Technologies
CDC	US Centers for Disease Control and Prevention
CIDA	Canadian International Development Agency
CRC	Convention on the Rights of the Child
CTL	Conditions of teaching and learning
DALY	Disability-adjusted life year
DASH	Division of Adolescent and School Health (at CDC)
DFID	UK Department for International Development
DOH	Department of Health
EDC	Education Development Center
EFA	Education for All
EI	Education International
ENHPS	European Network of Health-Promoting Schools
EURO	WHO Regional Office for Europe
FAO	Food and Agriculture Organization of the United Nations
FRESH	Focusing Resources on Effective School Health
GPA	WHO Global Programme on AIDS
HBSC	Health behaviour in school-aged children
HHD	Health and Human Development Programs (at EDC)
HIV	Human immunodeficiency virus
HPS	Health-promoting school
IBE	International Bureau of Education
IQ	Intelligence quotient
IRC	International Water and Sanitation Centre
MLA	Monitoring Learning Achievement
MOH	Ministry of Health
MOE	Ministry of Education
NGO	Non-governmental organization
PAHO	Pan American Health Organization
PCD	Partnership for Child Development
RAAPP	Rapid Assessment and Action Planning Process
RH	Reproductive health
STD	Sexually transmitted disease
STI	Sexually transmitted infection
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WCEFA	World Conference on Education for All
WFP	World Food Programme
WHO	World Health Organization
WPRO	WHO Regional Office for the Western Pacific
WWW	World Wide Web
YRBS	Youth Risk Behavior Survey

Executive summary

Findings

CHAPTER I

Introduction: the link between health and learning

In March 1990, world leaders gathered in Jomtien, Thailand, for the World Conference on Education for All (EFA): Meeting Basic Learning Needs. Rather than focus on the traditional issues of how to provide school buildings, textbooks, and teachers, they decided to address the process of learning and the needs of learners. Health and nutrition were included as important contributors to the success of the learner and the learning process. This study reviews the major activities that have taken place in the field of school health and nutrition around the world since Jomtien and suggests actions for the decade to come.

As many studies show, education and health are inseparable: nutritional deficiencies, helminth infections and malaria affect school participation and learning. Violence, unintentional injuries, suicidal tendencies and related behaviours, such as the use of alcohol and other drugs, interfere with the learning process. Sexual behaviours, especially unprotected sex that results in HIV infection, other sexually transmitted diseases, and unwanted or too-early pregnancies, affect the participation of students and teachers in education. Most important, many of these issues can be addressed effectively through health, hygiene, and nutrition policies and programmes for students and staff.

The information presented in this study is essential to policy- and decision-makers who are committed to achieving EFA because the link between learning and health clearly shows that it is unlikely that EFA can achieve its goals without significant improvements in the health of students and teachers.

CHAPTER II

Research highlights from the past decade: what strategies are effective?

Since Jomtien, a significant amount of research has addressed the effectiveness of school health interventions and the relationships between health, cognition, school participation and academic achievement. Experience has shown that if the quality and quantity of school health programmes are to increase, the education sector must take a lead role.

Ten major findings offer important guidance for the future:

- 1) School-based nutrition and health interventions can improve academic performance.
- 2) Students' health and nutrition status affects their enrolment, retention, and absenteeism.
- 3) Education benefits health.
- 4) Education can reduce social and gender inequities.
- 5) Health promotion for teachers benefits their health, morale, and quality of instruction.
- 6) Health promotion and disease prevention programmes are cost-effective.
- 7) Treating youngsters in school can reduce disease in the community.
- 8) Multiple co-ordinated strategies produce a greater effect than individual strategies, but multiple strategies for any one audience must be targeted carefully.
- 9) Health education is most effective when it uses interactive methods in a skills-based approach.
- 10) Trained teachers delivering health education produce more significant outcomes in student health knowledge and skills than untrained teachers.

CHAPTER III

Looking forward: suggestions for EFA 2015

The decade ahead offers great promise for strengthening the links between health and education. Major suggestions emphasize the development of a shared vision, a commitment to act, a pledge to work collaboratively, and the importance of a global effort to acquire and share information.

The suggestions are:

- 1) Major leaders and change agents in the field must come together around a common framework, relevant to the education sector.
- 2) To be successful, school health, hygiene and nutrition efforts must be led by educators, supported and assisted by health professionals, and made an integral part of the efforts to improve education through policies and goals.
- 3) We must continue to deepen and expand collaboration, especially between the education and health sectors, with mechanisms that sustain and nurture joint planning, action, and learning over time.
- 4) More investment is needed for health services that children and adolescents can reach easily, without stigma.
- 5) Access to information as well as sustained support to use it (e.g. professional development, technical co-operation, and mentoring) must be improved for education and health workers.
- 6) Multiple targeted and co-ordinated strategies are needed to improve desired behaviour patterns and health outcomes.
- 7) Indicators that provide universal measures of progress are needed to focus efforts and report changes that can be achieved by 2015.

- 8) Model programmes should be developed for different levels of investment, because countries vary in what they can afford.

Basis of findings

CHAPTER IV

Looking back: the status of school health leading up to Jomtien

International collaboration on school health has a history that goes back more than 120 years. As the 1980s came to a close, researchers around the world were launching studies to evaluate the effectiveness of specific health interventions to address nutritional deficiencies and the treatment of intestinal worms, in particular, and where possible to examine the effect of health interventions on cognition, school attendance, and other factors related to learning.

School health efforts in 1990 can be characterized in the following ways:

- 1) Health initiatives in schools focused primarily on disease prevention.
- 2) There was confusion about the concept and definition of school health.
- 3) Single, uncoordinated intervention strategies dominated.
- 4) Few formal mechanisms for multisectoral collaboration were in place.
- 5) Didactic, topic-by-topic teaching was the typical approach to health education.
- 6) Evidence of the effectiveness of interventions was not well known or disseminated.
- 7) Few tools were available to guide assessment and strategic planning.
- 8) Few donors earmarked school health programmes as a priority for funding.

CHAPTER V

Conceptual frameworks: the principles that drive action

Since the World Conference on Education for All, a major accomplishment has been the development of conceptual frameworks or unifying principles to guide school health policies and programmes.

Several major frameworks have contributed to the advancement of school health and nutrition programmes. Frameworks developed in the 1990s include the concept of the *Health-Promoting School* (stimulated by the Ottawa Charter, 1986, and advanced by the Council of Europe, the European Commission,

and the WHO Regional Office for Europe and WHO Headquarters); the *Child-Friendly School* (UNICEF); the *Basic Cost-Effective Public Health Package* (World Bank and the Partnership for Child Development, University of Oxford); and *Active Learning Capacity* (Levinger, EDC, for USAID and UNDP).

As the 1990s drew to a close, some of the major leaders and change agents at the world level came together to discuss how they might build on the frameworks since Jomtien and collaborate on a common framework for school health. WHO, UNICEF, UNESCO, and the World Bank are together developing FRESH Start: Focusing Resources on Effective School Health, launched at the Education for All Conference in Dakar (Senegal) in April 2000.

The four essential components of the FRESH framework are:

- 1) Health-related policies in schools.
- 2) Safe water and sanitation facilities.
- 3) Skills-based health education.
- 4) School-based health and nutrition services.

These components are intended to be supported by effective partnerships between teachers and health workers, effective community partnerships, and pupil awareness and participation.

CHAPTER VI

Major global trends: developments since Jomtien

Several major global trends over the past decade have dramatically influenced the scope and direction of school health work:

- 1) The AIDS pandemic stimulated a new demand and urgency for school health.
- 2) There was a gradual move from individual to multiple strategies and to integrated and co-ordinated approaches to school health programmes.
- 3) New mechanisms have emerged for multisectoral collaboration.
- 4) Student and community participation has been an important factor in promoting school health.
- 5) Skills-based methods for health education have gained recognition and greater use.
- 6) The documentation and dissemination of evidence of effectiveness have increased.
- 7) New tools have been tested for assessment, planning and monitoring.
- 8) Donor recognition of the field and investment have both increased.
- 9) International conferences have addressed school health.
- 10) Various barriers still exist that can hinder progress towards effective and sustained school health and nutrition interventions.

Findings

CHAPTER I

Introduction: the link between health and learning

The role of school health and nutrition at the Education For All Conference

In March 1990, world leaders gathered in Jomtien, Thailand, for the World Conference on Education for All: Meeting Basic Learning Needs. Its goal was to 'launch a renewed worldwide initiative to meet the basic learning needs of all children, youth and adults and to reverse the serious decline in basic education' (Inter-Agency Commission, 1990b). The conference organizers chose a different approach: rather than focus on the traditional issues of how to provide school buildings, textbooks, and teachers, they decided to address the process of learning and the needs of the learners. Health and nutrition were included as important contributors to the success of both the learner and the learning process.

In preparation for the round table, 'School Performance, Nutrition and Health' at the Conference, UNESCO published a key document – *Malnutrition and Infection in the Classroom* – which presented the relationship between the status of children's nutrition and health and their performance in school. The paper argued that because nutrition and health are so important in determining educational outcomes, they should figure prominently in any efforts to improve the quality of education and the ability of children to learn. In the preface, the Director-General of UNESCO stated, 'It is no longer possible to ignore the fact that nutrition and health can severely affect the ability of children to learn. We are constructing the future with the precious resource of the present – our children. It is essential that they be given the opportunity to derive maximum benefit from the schooling they receive' (Pollitt, 1990).

Schools have unique access to this 'precious resource'. In 1998, UNICEF estimated that out of 625 million children of primary school age, 79% were in school. The vast majority was receiving some basic education. It is also estimated that 70% of children in the developing world complete at least four years of schooling (UNICEF, 1999). Therefore, a school's potential to affect the health status and learning ability of an enormous number of the world's children stands before us. There are far more teachers than nurses or health-care workers in most countries. The teaching corps around the world can deliver many health promotion and health service interventions easily and effectively, with benefits to the teachers themselves as well (PCD, 1999b).

At the Jomtien Conference, participants echoed the need to broaden the perception of what contributes to basic education and to consider the many factors that affect human development. They called for an expanded vision of basic education, one that recognized that 'education does not work in a vacuum or in isolation from other factors that have a bearing on society' (Inter-Agency Commission, 1990b). Ultimately, the 1990 World Declaration of EFA and its articles recognized the relationship among health, education, and health/nutrition policies and programmes, stating that 'education can help ensure a safer, healthier, more prosperous and environmentally sound world' and 'learning does not take place in isolation. Societies must ensure that all learners receive the nutrition, health care, and general physical and emotional support they need in order to participate actively in and benefit from education'. To do so, 'new and revitalized partnerships at all levels will be necessary between education and social sectors' (Inter-Agency Commission, 1990b).

This study reviews the main activities that have taken place in the school health and nutrition field around the world since Jomtien, identifies strategies and interventions that have proven effective, and suggests actions for the decade to come. **The information presented in this study is essential to policy- and decision-makers who are committed to achieving EFA, because the link between learning and health clearly shows that it is unlikely that EFA can achieve its goals without significant improvements in the health of students and teachers.**

Call for action at Jomtien

Conference participants addressed the link between health and education. For example, UNESCO and the World Food Programme organized a round table on 'School Performance, Nutrition and Health'. The participants concluded that to learn effectively, children need good health. Further, they asserted that malnutrition and poor health may be important factors in low school enrolment, absenteeism, poor classroom performance, and early school drop-out (A.-M. Hoffmann-Barthes, personal communication, 1999).

The World Health Organization and other agencies presented another round table, 'Health Education for All: Enabling School-age Children and Adults for Healthy Living'. The paper presented by WHO on this occasion contained a compelling call for action:

1. Health education must be inseparably linked with the Education for All initiative.
2. Countries must formulate and support clear policies on school health education and ensure that the education and health sectors have a joint strategy for their implementation.

3. Curriculum development must be based on the health needs of the different age groups and take into consideration the socio-cultural background of the schoolchildren. Curriculum development committees must include parents and community leaders.
4. Personal and social development must, along with intellectual development, be given due weight in schools in order to foster values, attitudes, and behaviour conducive to health and well-being.
5. The teaching of school health education requires teacher preparation, guidelines, teacher learning material and curriculum support. Teacher training institutions must revise their courses in the light of this need. Team training of all categories of school personnel, including the health, administrative, and general staff, is recommended for a comprehensive school health programme.
6. The pivotal role of teachers in promoting health in the school and community needs to be given high priority. The support of teacher associations must be sought to increase the health awareness of teachers and encourage them to assume responsibility for being role models for health in the school and community.
7. Schools must be health-promoting institutions. In addition to emphasis on the development and implementation of health education curricula, attention must be paid to ensuring that teachers and other staff and the school environment support and facilitate healthful living.
8. School health education must be planned and implemented in the context of the pupils' support, families and the wider community to which they belong. It must relate to the life of the child in and outside of school. Involving schoolchildren in community activities and the community in school activities will bring about greater understanding and encourage mutual support (WHO, 1990).

Note that recommendations 7 and 8 present 'school health' as a concern for everyone in the school as well as members of the community.

Although the round tables on school health and education gave strong and clear guidance for improving school health programmes as a means of achieving education for all, those recommendations were not given priority in the final report or in the Framework for Action following Jomtien. Furthermore, no specific goals for school health and nutrition or indicators were established for the decade 1990–2000.

A growing body of evidence: the link between learning and health

In the decade since EFA, many publications and studies have elaborated on the link between learning and health status (e.g. WHO/UNESCO/UNICEF, 1992). A WHO report states, 'As long ago as 1950 it has been noted that nutritional deficiencies and

poor health in primary-school-age children are among the causes of low school enrolment, high absenteeism, early drop-out, and poor classroom performance. Health is thus a key factor in school entry as well as continued participation and attainment in school. Moreover, education that provides children with basic academic skills and specific knowledge, attitudes, and skills related to health is vital to their physical, psychological, and social well-being. This is not only true in the short term; such education lays the foundation for a child's healthy development through adolescence and across the entire lifespan' (WHO, 1997c).

As numerous studies show, education and health are inseparable

- Nutritional deficiencies (protein-energy malnutrition, iron, Vitamin A, and iodine deficiency) and health problems such as helminth infections (especially schistosomiasis and infections with roundworm and other intestinal parasites) and malaria affect school participation and learning. A 1990 analysis of nine studies on the relationship between nutritional anthropometric indicators (such as height-for-age and weight-for-height) and school indicators (such as age at enrolment, absenteeism, achievement test scores, IQ, and performance on selected cognitive tasks) showed that better nutritional status was consistently linked to higher cognitive test scores or better school performance (Pollitt, 1990).
- Violence, unintentional injuries, suicidal tendencies and related lifestyle behaviours, such as the use of alcohol and other drugs, interfere with the learning process. Children exposed to violence may become highly aggressive, use psychoactive substances, or show other dysfunctional ways of dealing with anxiety (Singer et al., 1995). This behaviour, in turn, may reduce attendance at school, impair concentration, and detrimentally affect cognitive development (WHO, 1998e).
- Sexual behaviours, especially unprotected sex that results in HIV infection, other sexually transmitted diseases, and unwanted or too-early pregnancies, affect both students' and teachers' participation in education. These behaviours place at risk students who have successfully reached secondary school. Too-early pregnancies negatively affect the education of young girls, who often must drop out of school. HIV/AIDS has already had a devastating impact on children in sub-Saharan Africa, where over 90% of all AIDS orphans live – most of them will never complete a basic education (UNICEF, 1999).

It is important that most of these issues be addressed effectively through health, hygiene and nutrition policies and programmes for students and staff. Table I, in the Appendix, shows examples of effective school-based interventions that prevent or reduce specific health conditions.

The purpose of this Thematic Study

The Thematic Study on School Health and Nutrition explores what has happened in the field of school health and nutrition since 1990. Drawing on the contributions of researchers, practitioners and policy-makers around the world, this study aims to learn from the promising developments of the past ten years, stimulate dialogue and move those involved to a shared vision and plan of action for the next decade. Specifically,

Chapter II presents research highlights of strategies that have been found effective;

Chapter III suggests actions to guide EFA 2015;

Chapter IV reviews the status of the school health and nutrition field leading up to Jomtien;

Chapter V describes conceptual frameworks that were developed through the 1990s;

Chapter VI reviews major global trends during the past decade.

The authors are aiming at a broad readership: those who work at different levels and in a variety of roles in the education, health and other sectors.

To prepare this study, the authors drew on:

- telephone interviews with and electronic questionnaires from approximately forty respondents in agencies at the international, regional and national levels;
- the collection and review of research articles, country reports, and publications from many international, regional, and national offices;
- Web searches of agencies of the United Nations and other organizations;
- their own first-hand knowledge of the field.

Many talented and dedicated people have worked tirelessly to move school health and nutrition policies and programmes forward in the 1990s. The authors are deeply grateful to so many who contributed ideas to this timely review and to the many more who have advanced the field of school health and nutrition through their work since Jomtien. ■

CHAPTER II

Research highlights from the past decade: what strategies are effective?

Since Jomtien, a significant amount of research has been conducted on the effectiveness of school health interventions and the relationships between health, cognition, school participation, and academic achievement. This chapter presents highlights of the evidence to guide future investments in school health and nutrition.

The experience of the last decade has shown that if the quality and quantity of school health programmes are to increase, the education sector must take a leading role. Therefore, research data must be made easily available to the education sector and those committed to achieving EFA, to guide advocacy, policy development and programme planning.

Ten major findings offer important guidance for the future:

1. **School-based nutrition and health interventions can improve academic performance.**
2. **Students' health and nutrition status affects their enrolment, retention, and absenteeism.**
3. **Education benefits health.**
4. **Education can reduce social and gender inequities.**
5. **Health promotion for teachers benefits their health, morale, and quality of instruction.**
6. **Health promotion and disease prevention programmes are cost-effective.**
7. **Treating youngsters in school can reduce disease in the community.**
8. **Multiple co-ordinated strategies produce a greater effect than individual strategies, but multiple strategies for any one audience must be targeted carefully.**
9. **Health education is most effective when it uses interactive methods in a skills-based approach.**
10. **Trained teachers delivering health education produce more significant outcomes in student health knowledge and skills than untrained teachers.**

Each finding is discussed below.

1. School-based nutrition and health interventions can improve academic performance.

Evidence from around the world shows that treating nutritional and health conditions in school can improve academic performance. For example, some school food programmes have shown marked effects on attendance and school performance (Levinger, 1994). In Benin, children in schools with food services scored significantly higher on second-grade tests than did those in schools without food services (Jarousse and

Mingat, 1991). In Jamaica, providing breakfast to primary-school students significantly increased attendance and arithmetic scores (Simeon and Grantham-McGregor, 1989). In the United States, low-income children scored significantly lower in achievement tests than higher-income children before they participated in a school breakfast programme. Once children were in the programme, their scores improved more than the scores of non-participants (Meyers et al., 1989).

Nutritional interventions such as micronutrient supplements and the treatment of intestinal worms have also proved to increase students' attention, cognitive problem-solving, and test scores (Nokes et al., n.d.). Research by the Ghana Partnership for Child Development (1996) showed that iron supplements – which could be effectively administered by teachers – lead to a very significant improvement in school performance for a period of up to six months (Berg, 1999). In Malawi, when the diets of primary-school children were supplemented with iron as well as iodine, the gain in IQ scores was greater than with iodine supplements alone (Shrestha, 1994). Two studies reviewed by Pollitt (1990) concluded that iron-deficient anaemic children showed lower aptitude when they first enrolled in school. However, this disadvantage disappeared once the children became iron-replete (e.g. through school-based supplementation). In the West Indies, a single chemotherapy treatment for whipworm infection given to children at school, without nutritional supplements or improvements in education, improved the children's learning capacity to the point that their test scores matched those of children who were not infected (Bundy et al., 1990).

2. Students' health and nutrition status affects their enrolment, retention, and absenteeism.

Height and weight for age are typical markers for entering school, and children not tall or heavy enough might be denied access. Thus, children in good health are more likely to start school at the developmentally appropriate age. 'For example, in Nepal, a study found that the probability of attending school was 5% for stunted children and 27% for children of normal nutritional status' (Moock and Leslie, 1986). In Ghana, malnourished children entered school at a later age and completed fewer years of school than better-nourished children (Glewwe and Jacoby, 1994).

School feeding programmes have been shown to lower absenteeism and drop-out rates. A recent evaluation of a school feeding programme in Burkina Faso found that school food services were associated with regular attendance, consistently lower repeat rates, lower drop-out rates, and higher success rates in national examinations, especially for girls (Moore, 1994). In Malawi, a small pilot school-feeding programme over a three-month period led to a 5% increase in enrolment and up to a 35% improvement in attendance (WFP, 1996). In the Dominican Republic, up to 25% of children – especially those from rural areas and girls – dropped out of school during a period without a school feeding programme (King, 1990).

3. Education benefits health.

Regular school attendance is one of the essential means of improving health. The school itself – through its culture, organization, and management; the quality of its physical and social environment; its curricula and teaching and learning methods; and the manner in which students' progress is assessed – has a direct effect on self-esteem, educational achievement, and therefore the health of students and staff (Hopkins, 1987; Rutter et al., 1979; Sammons et al., 1994).

Multiple years of schooling and the acquisition of literacy in several domains make it more likely that a person will be able to safeguard his or her health through living circumstances, earning power, access to health services, and general quality of life. Even a few years of schooling, evidence suggests, are associated with important changes of economic value in individual skills (Selowsky, 1981; UNICEF, 1999). Schooling pays off with higher incomes and a healthier workforce (World Bank, 1993).

4. Education can reduce social and gender inequities.

Poor health at school age is often connected with poverty and gender (Bundy, 2000). School health programmes have the potential to reduce inequities in society and to begin to break the cycle of poverty. 'Poor children with the worst health have the most to gain from school-based health and nutrition programs and the most to gain educationally. They show the greatest improvement in cognition as a result of health interventions' (World Bank, 1993; PCD, 1997).

During the twentieth century, 'education, skills and other knowledge have become crucial determinants of a person's and a nation's productivity. The primary determinant of a country's standard of living is how well it succeeds in developing and utilizing the skills, knowledge, health, and habits of its population' (Becker, 1995). One major reason given for the dramatic differences in economic development between East Asia and Africa, for example, is the significantly higher level of investment that East Asia has made in the education and health care of its citizens (Kristof, 1997). Thus, investments in education can have both short- and long-term benefits to an individual's health and the productivity of nations.

Girls, in particular, are likely to benefit: educated girls are likely to delay their first pregnancy and have fewer and healthier children. For example, data from thirteen African countries between 1975 and 1985 showed that a 10% increase in female literacy rates yielded a 10% reduction in child death rates (WHO, 1997c). Schools are also places where girls' nutritional and reproductive health can be addressed early, thereby preventing later problems. In Tamil Nadur, 'a school feeding programme attracted more girls to attend school and improved the attendance of those already in school. In addition to benefiting educationally, these girls had the opportunity to learn about family planning. As a result they had fewer children when they reached child-bearing age' (Devadas, 1983).

5. Health promotion for teachers benefits their health, morale, and quality of instruction.

The health of teachers is an important factor in the learning process. Teachers are the key to both education and health promotion in schools. They are caretakers of both the school and the students. Their health is thus critical to the achievement of EFA. While teachers must be trained about health matters affecting students, they also need training about taking care of their own health. Inevitably, the physical and mental health of the staff affects students directly through the quality of teaching and the attributes of the school's psychosocial environment (WHO, 1997c). Attending to teachers' health interests can motivate them to address students' health needs as well.

Some studies of the effectiveness of health promotion programmes for school staff have shown that they decrease teachers' absenteeism and improve both their morale and the quality of classroom instruction. Teachers who have participated in school health programmes reported improved attitudes towards their personal health and increased perceptions of general well-being (Belcastro and Gold, 1983; Jamison, 1993; Falck and Kilcoyne, 1984). Other studies found that the school personnel's knowledge of and behaviours concerning health were positively affected (Sandal, 1995; Maysey et al., 1988). One staff programme in the United States demonstrated reductions in body weight, resting pulse rate, serum cholesterol level, and blood pressure (Bishop et al., 1988).

6. Health promotion and disease prevention programmes are cost-effective.

Money invested in the prevention of health problems through the schools can save societal costs of treating disease. A recent study in the United States estimated that every US dollar invested in schools on effective tobacco education saves \$18.80 in the cost of addressing problems caused by tobacco use; every US dollar spent on education for preventing alcohol and other drug abuse saves \$5.69; and every US dollar spent on education to prevent early and unprotected sexual behaviour saves \$5.10 (Rothman and Collins, forthcoming).

A 1993 World Bank analysis determined that a basic public-health package with five central elements could reduce the burden of disease for a relatively modest per capita cost (World Bank, 1993). Extensive analyses of disease-control priorities have established that school-based treatments of children are exceptionally cost-effective. For example, school nutrition and health programmes have been estimated to cost only \$20 to \$34 per disability-adjusted life year (DALY) gained, and school-based tobacco and alcohol prevention programmes cost \$35 to \$55 per DALY gained (Del Rosso and Marek, 1996).

7. Treating youngsters in school can reduce disease in the community.

A leading publication by the World Bank, *Class Action: Improving School Performance in the Developing World through*

Better Health and Nutrition (Del Rosso and Marek, 1996), offers evidence that treating diseases prevalent in the school-age population can help to interrupt the transmission of disease to the surrounding community. For example, on the Caribbean Island of Montserrat, more than 90% of schoolchildren aged 4 to 12 were treated at four-month intervals for two and a-half months with an antiworm drug. Infection rates declined to almost zero. While less than 4% of adults in the community received treatment during the same time, their rate of infection declined an almost equal amount because of reduced transmission from the school-age children (Bundy et al., 1990).

8. Multiple co-ordinated strategies produce a greater effect than individual strategies, but multiple strategies for any one audience must be targeted carefully.

Strategies for school health programmes at both the national and local level have, for the most part, been singular in their approach. However, research continues to show the positive impact of multiple and targeted co-ordinated strategies. For example, a curriculum combined with youth community service is more effective in reducing risk behaviours such as fighting, early sexual behaviour, and substance use than a curriculum alone (O'Donnell et al., 1998). Policies for tobacco-free schools, combined with a skills-based curriculum on tobacco prevention, are more effective than the curriculum alone (Sussman et al., 1993).

In 1994 the Ghana Partnership for Child Development implemented a programme to treat parasitic infections in children through many schools in the Volta region. The programme used a combination of strategies, including clinical treatment, teacher and administrator training, and classroom education. After six months, test results showed a reduction in the prevalence of schistosomiasis from 15% to 5.7% and in hookworm from 52% to 2.4%. A re-survey in 1996 showed the prevalence of schistosomiasis to be 5.4% compared with 15.2% in 1994, and hookworm at a rate of 28% compared with 51% in 1994. In addition, children who took part in the programme improved both their attendance and school performance records (PCD, 1999a).

Often there are not enough resources and time to accomplish all the goals of a health promotion or disease prevention effort. Programme planners must then choose between providing a variety of strategies for a given population or focusing on a smaller number of activities. The National Structured Evaluation of Alcohol and Drug Abuse Prevention in the United States undertook an analysis of more than 300 community-based substance abuse prevention initiatives. The researchers concluded that projects that attempted to offer **more** than three or four types of activity to a single adolescent population were generally ineffective. The study concluded that 'comprehensive prevention depends more on selecting appropriate activities and services for each population served than on trying to provide a wide variety of activities and services. There may be an effective limit to the variety of preven-

tion activities that should be provided at a given time to a single population, beyond which the addition of a greater variety of activities adds little to measured effects of the prevention efforts' (Division of Knowledge Development and Education, 1997, p. 23). The implication for school-based prevention is that planners need to select and target a few strategies to promote health, and to address the most serious health threats.

9. Health education is most effective when it uses interactive methods in a skills-based approach.

Health education aims not only to improve pupils' interest in health, their ability to relate what they learn to their own lives, and their understanding of basic ideas about health, but also to apply what they learn to the lives of their families and friends. To do so, health learning must emphasize skills development over simple information sharing, and provide opportunities for students to practice healthy behaviours or to address the conditions that promote health both personally and collectively (A.-M. Hoffmann-Barthes, personal e-mail, 2000).

Skills-based health education, including life skills, and interactive teaching methods have been shown to promote healthy lifestyles and reduce risk behaviours. A meta-analysis of 207 school-based drug-prevention programmes grouped the approaches to prevention into nine categories. The author found that 'the most effective programs teach comprehensive life skills'. Programmes were also grouped according to whether they used interactive methods or not. The study concluded that 'the most successful of the interactive programs are the comprehensive life skills programs that incorporate the refusal skills offered in the social influences programs and add many general life skills such as assertiveness, coping, communication skills, etc.' (Tobler, 1998 draft).

Skills-based health education and life skills have been shown to reduce the chances that young people will engage in delinquent behaviour (Elias, 1991) and interpersonal violence (Tolan and Guerra, 1994); the use of alcohol, tobacco, and other drugs (Griffin and Svendsen, 1992; Caplan et al., 1992; Werner 1991; Errecart et al., 1991; Botvin et al., 1980, 1984); high-risk sexual activity that can result in pregnancy or STD or HIV infections (Kirby, 1997; WHO/GPA, 1994; Postrado and Nicholson, 1992; Scripture Union, n.d., Zabin et al., 1986); emotional disorders (McConaughy et al., 1998); and bullying (Oleweus, 1990).

10. Trained teachers delivering health education produce more significant outcomes in student health knowledge and skills than untrained teachers.

Training for school personnel is an important aspect of school health-promotion programmes (WHO, 1997c). Studies show that training teachers how to use a health-education curriculum improves its implementation (Connell et al., 1985).

Similarly, an evaluation of the Teenage Health Teaching Modules (THTM) curriculum, using skills-based approaches for health education in grades 7 to 12 in the United States, showed

that training teachers before using the curriculum positively affected teachers' self-reported feeling of preparedness and had positive effects on both curriculum implementation and student outcomes. Students in health education classes taught by trained teachers scored significantly higher on health knowledge and attitude scores, and, at the senior high-school level, were also more able to curb self-reported use of illegal drugs, than those covering the same material with untrained teachers (Ross et al., 1991).

Training teachers has the added value of gaining their commitment and support, as well as their understanding of a specific curriculum and its supporting policies and programme – all important factors for successful implementation.

Moving from research to action

Table I elaborates on the evidence described above as it applies to specific health issues and interventions. The effect on education of health issues, such as safe water and sanitation, helminth infections and nutrition, and lifestyle behaviours associated with STDs, HIV/AIDS, and alcohol, tobacco and other drugs are highlighted, and evidence is given that schools can address these issues effectively. Table II provides an overview of illustrative roles that educators and their collaborators can play to address selected health issues.

This research and the directions it suggests must be made more accessible to educators in order to make greater strides in the next decade to improve the health and education of the world's children. State-of-the-art knowledge must move from the pages of technical journals to discussions and debates in ministries, school buildings, classrooms, and communities. Only when these findings and ideas become part of daily conversations among administrators, teachers, and health workers will more attention be given to these important aspects of successful learning. Improvements in education will not succeed if we do not simultaneously pay attention to the healthy development of both students and staff in schools. ■

CHAPTER III

Looking forward: suggestions for EFA 2015

With the research findings of the past ten years as a guide, the forthcoming decade shows great promise for strengthening the links between health and education. The record of the past decade affirms that the world community can translate its highest aspirations for children into effective programmes. If the past is indeed a prelude to the future, we can say with confidence that the pace in responding to the learning and health needs of children greatly accelerates once consensus has been achieved on policies and programmes that work. We hope that the following suggestions will encourage consensus on what countries must do to meet the health and learning needs of their school-age citizens. These suggestions emphasize the development of a shared vision, a commitment to act, a pledge to work collaboratively, and the importance of a global effort to acquire and share information.

1. Major leaders and change agents in the field must come together around a common framework, relevant to the education sector.

Such a framework should be part of a larger effort to improve the general quality of the schools and the education children receive. The creation of frameworks in the past decade (see Chapter V) contributed enormously to driving the school health agenda forward. Frameworks have increased creativity, generated experimentation, and inspired a broad range of research and programme activities. At this juncture, however, we run the risk of allowing the proliferation of so many frameworks to diffuse human and financial resources and to confuse those who are ready to take action. A shared framework should drive an *action agenda* that:

- 1) promotes healthy development and focuses on the most serious and common health threats through the co-ordinated implementation of *core components* of a school health and nutrition programme in schools everywhere;
- 2) sets specific, *quantifiable goals* for the agenda;
- 3) *applies lessons learned* from the past decade on how best to implement the core components; and
- 4) establishes *indicators* to monitor the implementation and effectiveness of the core components in countries and schools worldwide.

A shared framework must view the school as a dynamic system in which people can effect change to promote health and learning and which focuses not only on children but also on staff, teachers, parents and community members, and links to health services.

2. To be successful, school health, hygiene and nutrition efforts must be led by educators, supported and assisted by health professionals, and made an integral part of the efforts to improve education through policies and goals.

School health and nutrition efforts can have a powerful effect on improving the status of schools (through efforts by schools and communities) as well as of education (through policies and goals). Much of the power of school health programmes lies in their ability to mobilize schools and communities around the improvement in educational quality and outcomes for their children. Educators must be convinced that such programmes are practical and feasible, yield results, are beneficial to staff and students, and advance learning. It is equally important that leaders relate the efforts to the social and economic agenda in gaining support. Recruiting a small but highly influential group of well-known and respected international educators to champion the school health agenda would be valuable.

3. We must continue to deepen and expand collaboration, especially between the education and health sectors, with mechanisms that sustain and nurture joint planning, action and learning over time.

Experiments have taken place at the world, regional, and national levels to bring the education and health sectors together. Where successful, these collaborations have created a common language, provided unique contributions for sharing and learning, and leveraged resources (e.g. Short et al., 1999). However, sustaining the collaboration is difficult. It is also important to identify and use the unique roles of various participants. Collaboration does not mean that everyone does the same thing, but that each sector makes its own unique contribution to common goals. Successful collaboration must identify the most relevant role for the educator, the health worker, and the parent and community member. More must be done to sustain emerging networks for collaboration, providing professional development, resources, and materials to increase their capacity and to sustain energy and commitment in the face of obstacles.

4. More investment is needed for health services that children and adolescents can reach easily, without stigma.

More health services should be located in or near schools and staffed with people trained to work with youth. Young people all over the world need health services, particularly those that are 'youth-friendly'. Traditional health services must move beyond medical treatment to preventive services and early intervention and accommodate the particular needs of young people (e.g. for emotional support, confidentiality and accessibility).

5. Access to information as well as sustained support to use it (e.g. professional development, technical co-operation, and mentoring) must be improved for education and health workers.

Much is known about the effectiveness of various school health and nutrition programmes. Research findings could have a much greater impact if they were accessible to more

people. We must try to extract key findings from the many excellent technical documents that exist, and make them available in simple, clear formats and multiple languages for practitioners. There is a need for ongoing professional development and technical know-how for education and health workers about how to identify, select, and implement the most effective strategies for their needs. A creative use of the Internet and on-line training must be applied to the field of school health and nutrition on a global scale.

6. Multiple targeted and co-ordinated strategies are needed to improve desired behaviour patterns and health outcomes.

Research in public health, the foundation of most approaches to school health, has demonstrated that multiple strategies co-ordinated to address a few common goals are more effective in producing desired behaviour changes and health outcomes than single-track approaches. Such strategies may include co-ordinated policy, supportive environments, community action, personal skills, and health services targeted to a few selected conditions (WHO; Ministry of Health; Republic of Indonesia, 1997).

7. Indicators that provide universal measures of progress are needed to focus efforts and report changes that can be achieved by 2015.

While there has been tremendous progress since Jomtien, it is impossible to tell the full story of what has happened globally without common indicators of progress. Such indicators could provide information about national capacities and infrastructure to implement school health programmes. Measures could include the availability of school policies and budgets with line items dedicated to health, mechanisms for collaboration, and the health-related training of teachers and health workers. Beyond measures of capacity, indicators of children's health status could include height and weight data, rates of anaemia and other micronutrient deficiency diseases, and number of meals or fruit and vegetable servings per day. At the national and local level, too, more and better programme planning and evaluation tools are necessary.

8. Model programmes should be developed for different levels of investment, because countries vary in what they can afford.

We should identify the best package of inputs and services at different investment levels (e.g. \$2, \$5, and \$10 per child). For each 'model package', we should also identify the expected benefits as precisely as possible. Such an approach will allow countries to launch school health initiatives that are both efficacious and affordable.

Another observation must inform our efforts in the future. In many countries, people who are very poor and disenfranchised have reported that *their participation in addressing health issues* in schools has made a difference to their lives. The opportunity to have a voice and role in creating change to improve the quality of life for their children, themselves, and their community has transformed their world. In his book *Development as Freedom*, the Nobel prizewinner for economics Dr Amartya Sen argues that reductions in poverty and progress in economic development are possible only when citizens have the freedom or opportunity to receive basic education and health care (Sen, 1999). With the participation of all – the education and health sectors, parents, teachers, and community members – people everywhere can make gradual improvements in their quality of life.

As we consider the changes that policy-makers, practitioners, and citizens can bring about in the future, it is good to reflect on developments in the past. The following chapters look back at the status of school health leading up to Jomtien in 1990, describe conceptual frameworks that were developed in the 1990s, and highlight major trends that took place in the field of school health and nutrition since Jomtien. ■

Basis of findings

CHAPTER IV

Looking back: the status of school health leading up to Jomtien

Historical perspective of the school health field

International collaboration in school health has a history of more than 120 years. In the 1800s, school health became an issue when compulsory education laws were enforced in Europe. In 1880, the Third International Congress on Education in Brussels addressed school hygiene as one of the plenary topics. Through each decade of the 1900s, the agenda of international school health conferences included such topics as school construction and furniture, medical inspection in schools, individual health records, physical education and training, the hygiene of dormitories, the prevention of contagious diseases in schools, and hygiene for teachers, students, and families (Mott, 1995 draft).

Following a 1946 survey of ministries of education, the International Bureau of Education of UNESCO prepared recommendations to improve the teaching of health in primary schools, with the goal of making it a genuine part of education. By 1967, all of the ninety-four countries replying to a second survey indicated that some form of health education was compulsory in primary schools and was often integrated into other subject areas, such as science education. Nevertheless, the report recognized that not all schools were effectively assisting children in adopting positive attitudes and behaviours about safeguarding their own health and that of others (IBE, 1946; IBE/UNESCO, 1967).

From the 1960s until the mid-1980s, international conferences and publications in the field of school health were less evident (Mott, 1995 draft). This decline of attention at the international level was consequential because international leadership and advocacy can be catalytic for national and local efforts.

However, during this same period when school health was less visible on the international stage, the developing world was making considerable progress on another front: increasing the survival rates of children from birth to 5 years of age. In 1960, only five of every six children born (83%) lived to their first birthday. By 1991, at least 12 of every 13 children born (92%) were expected to reach that landmark. The success of the Child Survival movement meant that more and more children were going to enter school. An important question began to emerge:

how can we maintain and improve children's health to maximize their learning?

By the end of the 1980s, a number of international organizations renewed their interest in school health and nutrition programmes around the globe. UNESCO was one of the first United Nations agencies to address the area of school health and nutrition. In the 1980s, UNESCO initiated the Nutrition Education Series and held various technical meetings on this topic (Dolan, 1999; A.-M. Hoffmann-Barthes, personal e-mail, 2000). Also, the Council on Europe, the European Commission, and the WHO Regional Office in Copenhagen were beginning to discuss a broader concept of school health. These groups looked at all aspects of the school as a system and a setting in which health could be promoted by those in it (I. Kickbusch, personal communication, 1999). In the United States, with the support of the Centers for Disease Control and Prevention, and backed by the evaluations of several major school health education programmes, the concept of a comprehensive school health programme with eight components became more widely understood (Allensworth and Kolbe, 1987) and implemented (Kolbe et al., 1997).

As the 1980s came to a close, researchers around the world were beginning to evaluate the effectiveness of specific health interventions to address nutritional deficiencies and the treatment of intestinal worms, in particular, and, where possible, to examine the relationship of health interventions to cognition, school attendance, and other factors in learning.

For example, in 1989 an examination of the global distribution of parasitic worm infections revealed that large parasitic burdens, particularly severe hookworm infection, were associated with impaired cognitive function as well as poor educational outcomes, such as absenteeism, under-enrolment, and attrition (Bundy and Guyatt, 1989).

With these realities in mind, the Background Document for the World Conference on Education for All argued that 'the education sector needs to attend to the health needs of children or they may be rendered "unteachable"'. It went on to say that 'the adverse effects of malnutrition and poor health on education may indeed be jeopardizing children's readiness to enter school, their ability to learn, and the duration of their schooling. Addressing children's nutrition and health could make a difference in terms of improving educational performance' (Inter-Agency Commission, 1990a).

Highlights of the status of school health in 1990

While there was growing recognition of the need to address the health status of young people to maximize learning leading up to Jomtien, what was actually happening in school health

policy and practice? Based on a synthesis of experts' reflections and published studies, school health efforts in 1990 can be characterized in the following ways:

1. **Health initiatives in schools focused primarily on disease prevention.**
2. **There was confusion about the concept and definition of school health.**
3. **Single, uncoordinated intervention strategies dominated.**
4. **Few formal mechanisms for multisectoral collaboration were in place.**
5. **Didactic, topic-by-topic teaching was the typical approach to health education.**
6. **Evidence of the effectiveness of interventions was not well known or disseminated.**
7. **Few tools were available to guide assessment and strategic planning.**
8. **Few donors earmarked school health programmes as a priority for funding.**

A brief discussion of each item follows.

1. Health initiatives in schools focused primarily on disease prevention.

Many school health efforts aimed to improve hygiene, prevent the spread of infections, treat specific health conditions, and provide screening or medical examinations. Many countries also expanded their efforts to incorporate health topics into national curricula. Both the services and curricular work tended to emphasize specific disease prevention more than health promotion.

For example, in 1987 Pakistan initiated a School Health Services Programme and recommended in its five-year plan that all children have a complete medical check-up when they enter school and a comprehensive quarterly check-up as long as they remain in school. Pakistan's subsequent five-year plan (1993–98) recommended that the programme be reoriented towards developing healthy lifestyles among schoolchildren, thus recognizing the need for a more comprehensive and lifestyle-oriented approach (Memon, 1999). In 1990 Namibian schools provided immunization, physical examinations, and a limited amount of information on 'health matters'. There were no policy guidelines, no provision for family-life education for either teachers or pupils, and the use of life skills education was just beginning (WHO/UNESCO/UNICEF, 1992).

2. There was confusion about the concept and definition of school health.

As Donald Bundy of the World Bank commented, 'There was considerable confusion about the definition of school health and nutrition in 1990. Was the aim to promote health education? Was it to use schools to deliver a service, such as nutritional supplements? Was it to look at the broader structure and processes and conditions of the school environment?

There was even more confusion over whether the goal was to improve health, or to improve education through improved health' (D. Bundy, personal communication and e-mail, 1999). Maria Teresa Cerqueira of the Pan American Health Organization said, thinking primarily of Latin America, 'The concept in 1990 was still bound to issues like hygiene or preventing Dengue fever, primarily physical health issues. There was little attention to emotional or mental health. Parental and community participation was minimal' (M. T. Cerqueira, personal communication, 1999).

The confusion also affected the teaching of school health. Anna-Maria Hoffmann-Barthes of UNESCO commented, 'Health education, unlike other subjects in the curriculum, is one with a history of involvement by people from outside the education system, frequently health professionals. The risks of such "outside ownership" and subsequent lack of co-operation between the education and health sectors are numerous. Education professionals have often shown a certain disinterest in health issues; health professionals invited to teach the subject typically lack understanding of the pedagogy necessary for skill development and behaviour change and the effective implementation of school health education programmes' (A.-M. Hoffmann-Barthes, personal communication, 1999).

In 1990 health and education professionals usually defined school health and nutrition as either health curriculum or health services, but seldom as the integration of the two. While the importance of linking health instruction to services and other components was often discussed, there was no unifying concept to galvanize all the participants to work together for a truly global effort. Experience has shown that a powerful concept can create enthusiasm and motivate policy-makers and practitioners to implement new ideas (Vince-Whitman, 1995). And, as David Rivett of the European Network of Health-Promoting Schools said, 'It has been critical for us in Europe to have a concept or framework in place first. We have seen how the framework has driven the agenda and provided a map for action in countries and with local schools' (D. Rivett, personal communication, 1999).

In 1990, at the international level, there was no single, clear definition or framework across all the agencies to guide their direction and activity. In the early 1990s a few more integrated concepts began to appear. However, no matter what concept was used, school health and nutrition were often regarded as separate and apart from the mission of basic education. School health advocates often found themselves frustrated and unable to convince educators of the importance and interdependence of health and education.

3. Single, uncoordinated intervention strategies dominated.

In 1990, and in some cases to this day, the field of school health and nutrition depended primarily on single, uncoordinated strategies, which alone have limited potential for success. Many

school health efforts involved curricula that were not complemented by policies or a supportive school environment. For example, teaching about the dangers of tobacco took place in schools in which students and faculty were allowed to smoke. Similarly, health services treated conditions like intestinal worms, but often without complementary improvements in sanitation and safe water or educational messages to prevent re-infection. Seldom were approaches comprehensive, that is, uniting policy with instruction, services and the school environment to reinforce one another in targeting specific health and educational outcomes.

Sheldon Shaeffer of UNICEF, who worked extensively in East Asia, commented, 'Most of the activities which I saw were limited to putting water supply and latrines into schools. There may also have been a health education programme in the same school, but it was not co-ordinated with any other component of a school health programme. The water and sanitation effort was not accompanied by any reinforcing education strategy and there was no evaluation of academic outcomes. There was no look at whether the provision of these services increased enrolment (especially of girls) or general use of the facilities by students or community members' (S. Shaeffer, personal communication, 1999).

Too often there has been a vertical approach to a problem such as malaria. For example, medical personnel will arrive at a school with the view that 'malaria is your problem and this is what you must do to treat it'. There has been little attempt to gain community participation and support for the intervention. Therefore its acceptance and success are limited.

On the other hand, multiple strategies that are co-ordinated to address a few common goals have proved effective. In the United States, for example, Project Northland is a school/community substance-abuse prevention programme that includes planned parental involvement, peer-led skills-building sessions, community policy change and enforcement, all designed to test the efficacy of a multilevel, multistrategy, multiyear intervention programme for youth. After three years, an evaluation demonstrated that the percentage of students who reported alcohol use in the previous month and week was significantly lower in the intervention group at the end of eighth grade than in the reference group (Komro et al., 1996; Perry et al., 1993; Perry et al., 1996).

4. Few formal mechanisms for multisectoral collaboration were in place.

In 1990 there were few cross-sectoral mechanisms in place at the international, regional, national, or local levels. These mechanisms provide a way for partners to unite around common goals, co-ordinate and leverage valuable resources, provide a forum for learning, and exchange technical expertise. However, the education sector typically handled health instruction while the health sector addressed services, with few linkages between the two. Agencies responsible for water, san-

itation, and the school's physical structure have usually acted independently of the other sectors.

Given the effectiveness of targeting multiple strategies to improve children's health and learning, collaboration is necessary across sectors (education, public health, medicine, environmental services) and between agencies with common goals and interests (governmental and non-governmental agencies, national and international organizations). The lack of such important structural mechanisms to expedite policy development and programme implementation, combined with confusion about a unifying concept, was the most critical obstacle to progress in the field. Without such structures, it is difficult at any level to harness the multidisciplinary expertise and resources necessary to achieve school health goals.

5. Didactic, topic-by-topic teaching was the typical approach to health education.

Most school health education programmes have been concerned with providing information on specific topics, not with building skills (Hubley, 1998). A review of curricula from the early 1990s reveals that they typically provided information about ten topics, almost all about physical health or specific diseases, rather than building skills to practice healthy overall behaviour (Hubley, 1998). Sexuality was usually omitted, as was any attention to emotional or mental health; violence and suicide were not regarded as public health issues (Cerqueira, 1999).

A review of school health education in Europe in 1991 reported, 'There is general agreement in Europe over the range of health issues which need to be addressed in schools. There has been a tendency, however, for school health education to be dominated by single health issues – particularly drugs and AIDS – which has inhibited the whole-hearted adoption of the holistic healthy lifestyle approach necessary for a balanced and convincing programme in schools' (Draijer and Williams, 1991).

While several innovative skills-based or life skills curricula were developed during the 1980s, the primary teaching method continued to be the didactic lecture. It has now been well documented that the teaching methods with the strongest likelihood of producing change in the health behaviour of students are interactive learning strategies or experiential learning (Tobler, 1998 draft).

Many in the field recognized the child-to-child approach as an outstanding programme in health education at the time of EFA (Hubley, 1998). Begun in London, the child-to-child approach focused on teaching older children to deliver health messages to their younger siblings through interactive methods. Gradually, the approach expanded to prepare children to promote good health among their peers, families, and communities (Hubley, 1998). Child-to-child placed young people in an active teaching role.

6. Evidence of the effectiveness of interventions was not well known or disseminated.

Few evaluations were made of the effectiveness of health education curricula or any other school health initiative. Those that did exist were disseminated primarily to health education professionals rather than to the mainstream education sector or to professionals in the public health or medical arenas. Similarly, research about health service interventions was published primarily in journals aimed at the medical, nutrition, or public health sectors. There were few opportunities for the two important audiences of educators and health workers to learn together about the important link between health and education.

By 1990 a new body of research was emerging concerning the impact of health interventions on the status of health and on cognition and learning outcomes. But the findings were not widely disseminated.

At the time, the Internet was in its infancy, and the dissemination of information, especially for developing countries, still relied almost exclusively on expensive printed documents, most often available only in English.

7. Few tools were available to guide assessment and strategic planning.

Planning in public health, education, and organizational development often begins with the collection of data to define the problem and the assets or strengths to address it. From there, planners can set measurable goals and objectives, then define action steps and milestones to measure progress. In 1990 few, if any, assessment and strategic planning tools were available for education policy-makers and programme planners to collect and use data to plan policies, programmes, and interventions in an integrated and complementary manner designed for the health needs of children and adolescents in school. Thus, educators in particular had little information about the strengths and limitations of the many parts of a school health programme that could have guided them in selecting and developing effective intervention strategies. In addition, there was limited information about the costs associated with implementing specific interventions.

8. Few donors earmarked school health programmes as a priority for funding.

Many workers in the field share the general perception that it was difficult to find departments within United Nations agencies and international non-governmental organizations with a brief that included school health programmes. It was also difficult to find donors who had made it a priority to fund international efforts to improve school health programmes.

The field of school health and nutrition has progressed considerably over the past decade. Improvements have involved the development of conceptual frameworks as well as various other major trends and activities discussed in the next two chapters. ■

CHAPTER V**Conceptual frameworks:
the principles that drive action**

A major accomplishment since the World Conference on Education for All in Jomtien has been the development of conceptual frameworks or unifying principles for school health policies and programmes. These frameworks have also served as a catalyst to mobilize partnerships across sectors at all levels. In addition to the frameworks developed by United Nations agencies and a few other international organizations, significant and noteworthy activity was also conducted by frontline grass-roots organizations in the past decade (V. Chandra-Mouli, personal communication, 2000). This chapter describes some of the major conceptual frameworks that have influenced the school health and nutrition agenda over the past decade. Frameworks developed in the 1990s include the concept of the *Health-Promoting School* (stimulated by the Ottawa Charter, 1986, and advanced by the Council of Europe, the European Commission, and the WHO Regional Office for Europe and WHO Headquarters); *the Child-Friendly School* (UNICEF); the *Basic Cost-Effective Public Health Package* (World Bank and the Partnership for Child Development, University of Oxford); and *Active Learning Capacity* (Levinger, EDC, for USAID and UNDP, 1996). One framework, FRESH (*Focusing Resources on Effective School Health* (WHO, UNICEF, UNESCO, World Bank), was launched jointly at the EFA Conference in Senegal in April 2000.

Framework of the health-promoting school

The concept of the health-promoting school (HPS) started in Europe. It is based on public health theory and builds on the Ottawa Charter of Health Promotion (1986), which recognized that 'health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created by caring for oneself and others, by being able to make decisions and have control over one's life and circumstances, and by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members' (WHO, 1986). The WHO Regional Office for Europe, the Council of Europe, and the European Commission first widely promoted the HPS concept. The aim was to achieve healthy lifestyles for the total school population by developing environments conducive to the promotion of health. The HPS concept extended beyond school health education to a broader array of complementary interventions.

The earliest descriptions of the HPS, then called the 'Healthy School', were developed during the first major conference of all the European nations on school health promotion in Scotland in 1986. The model, described in a report by Young and

Williams, featured an overarching policy and three essential co-ordinated components: instruction, health services, and a healthy school environment – both physical and psychosocial (I. Young, personal e-mail, 2000). A similar concept, the Eight Component Model, was developed in the United States by Allensworth and Kolbe in an effort to explore whether the concept of the school health programme should be expanded. If co-ordinated, the following eight components of the model could have complementary, if not synergistic, effects (Kolbe, 1986; Allensworth and Kolbe, 1987):

- school health services
- school health education
- school health environment
- integrated school and community health promotion efforts
- school physical education
- school food service
- school counselling
- school health-promotion programmes for faculty and staff

In the 1990s both of these frameworks guided many policy decisions and programming efforts throughout Europe and the former Soviet Union and in the United States. As documents and programme descriptions were published, interest grew among international and national health and education workers to apply them to the needs of a broad range of countries.

To gain a thorough understanding of the status of school health worldwide and prepare recommendations for improving health through schools, in 1994–95 WHO convened an Expert Committee. The Education Development Center synthesized the findings from hundreds of evaluation research and feeder papers written by WHO staff and experts around the world. This initiative produced the following four documents, published by WHO: *The Status of School Health*; *Improving School Health Programmes: Barriers and Strategies*; *Research to Improve Implementation and Effectiveness of School Health Programmes*; and *Promoting Health through Schools* (WHO, 1996b, 1996c, 1996d, 1997a).

The Expert Committee concluded that research in both developing and developed countries demonstrates that school health programmes can simultaneously reduce common health problems, increase the efficiency of the education system, and further public health, education, and social and economic development in all nations. The committee made ten recommendations to improve health through schools worldwide (see box, above right).

Following the Expert Committee meeting and report in 1995, WHO launched its Global School Health Initiative to support schools to become Health-Promoting Schools. Although definitions will vary between regions, countries, and schools according to need and circumstance, an HPS can be characterized as a school that is constantly strengthening its capacity as a healthy setting for living, learning, and working.

■ Recommendations of the WHO Expert Committee on Comprehensive School Health Education and Promotion (1995)

1. Investment in schooling must be improved and expanded.
2. The full educational participation of girls must be expanded.
3. Every school must provide a safe learning environment for students and a safe workplace for staff.
4. Every school must enable children and adolescents at all levels to learn critical health and life skills.
5. Every school must more effectively serve as an entry point for health promotion and a location for health intervention.
6. Policies, legislation, and guidelines must be developed to ensure the identification, allocation, mobilization, and co-ordination of resources at the local, national, and international levels to support school health.
7. Teachers and school staff must be properly valued and provided with the necessary support to enable them to promote health.
8. The community and the school must work together to support health and education.
9. School health programmes must be well designed, monitored, and evaluated to ensure their successful implementation and outcomes.
10. International support must be further developed to enhance the ability of Member States, local communities, and schools to promote health and education.

A Health-Promoting School:

- Strives to improve the health of school personnel, families, and community members as well as students.
- Fosters health and learning with all the measures at its disposal.
- Engages health and education officials, teachers, teachers' unions, students, parents, health providers, and community leaders in efforts to make the school a healthy place.
- Strives to provide a healthy environment, school health education, and school health services along with school/community projects and outreach, health promotion programmes for staff, nutrition and food safety programmes, opportunities for physical education and recreation, and programmes for counselling, social support, and mental health promotion.
- Implements policies and practices that respect an individual's well-being and dignity, provide multiple opportunities for success, and acknowledge good efforts and intentions as well as personal achievements.

The Global School Health Initiative of WHO Headquarters uses four strategies to disseminate this framework:

- *Consolidating research* and expert opinion to describe the nature and effectiveness of school health programmes (WHO, 1996a, 1996b, 1996c, 1996d, 1997c).
- *Building capacity* to advocate for the creation of Health-Promoting Schools (HPS) and to apply the components of a HPS to priority health issues, including helminth infections, violence, nutrition, tobacco use, and HIV/STI (WHO, forthcoming, 1997d, 1998c, 1998d, 1998e, 1998 draft).

- *Strengthening collaboration* between the ministries of education and health and other relevant organizations *and national capacities* to assess, plan, and implement policies and programmes to improve health through schools (WHO, 1998b; Vince-Whitman et al., 1997).
- *Creating networks and alliances*, including regional networks for the development of Health-Promoting Schools and international alliances, such as among WHO, EI, UNESCO, UNAIDS, CDC, and EDC to strengthen the capacities of teachers' unions to prevent HIV/STI (WHO, n.d.a, n.d.b; EI, 1998).

These strategies have been implemented in collaboration with other relevant programmes and departments within WHO, including the WHO Regional Offices, and with international agencies that are interested in the development of Health-Promoting Schools, including Education International (EI), a professional organization of about 25 million teachers worldwide, and the Child-to-Child Trust. The European Network of Health-Promoting Schools, for example, has since 1990 enrolled more than 500 pilot schools with 400,000 students in thirty-seven countries in Europe and the former Soviet Union (European Commission et al., 1996).

Framework of the child-friendly school

Based on the Jomtien documents and a number of other developments in the field of children's rights, UNICEF has recently developed a framework of rights-based, child-friendly education systems and schools that are characterized by being 'healthy for children, effective with children, protective of children, and involved with families and communities – and children' (S. Shaeffer, personal communication, 1999).

This framework builds on the proclamation at the Jomtien Conference that 'education is a fundamental right for all people, women and men, of all ages, throughout our world'. Referring to health, the declaration went on to say that 'education can help ensure a safer, healthier, more prosperous and environmentally sound world' (Inter-Agency Commission, 1990b).

UNICEF's framework was also inspired by the Convention on the Rights of the Child, held in 1989, which set the stage by acknowledging that children's rights require special protection for the purpose of the general improvement of their conditions and for their development and education.

UNICEF's framework broadly defines core components that characterize a child-friendly school, each component incorporating factors concerning education, health, and human rights.

In a child-friendly school:

- The school is a significant personal and social environment in the lives of its students. A child-friendly school ensures every child an environment that is physically safe, emotionally secure, and psychologically enabling.
- Teachers are the single most important factor in creating an effective and inclusive classroom. Child-friendly schools are teacher-friendly, supporting, encouraging, and they facilitate teachers towards being motivated, capable, self-confident, and consistently available.
- Children are natural learners, but the capacity to learn can be undermined and sometimes destroyed. A child-friendly school recognizes, encourages, and supports children's growing capacities as learners by providing a school culture, teaching behaviours, and curriculum content that are focused on learning and the learner.
- The ability of a school to be and to call itself child-friendly is directly linked to the support, participation, and collaboration it receives from families.
- Child-friendly schools have a key role to play in ensuring that children's rights are reflected throughout the education system, just as education systems must ensure that schools have the resources to act on behalf of all children.
- The rights of children as articulated in the CRC are indivisible. They all apply, all of the time, to all children. Schools and education systems have a role in ensuring that children's rights are reflected throughout a country's governance community. Child-friendliness is a broad public-policy matter (Bernard, 1999 draft).

Child-friendly schools aim to develop a learning environment in which children are motivated and able to learn. Staff members are friendly and welcoming to children and attend to all their health and safety needs. WHO supports the framework of the child-friendly school by helping schools become 'health-promoting' as an essential step towards becoming 'child-friendly'.

Framework of the basic cost-effective public-health package

The concept that schools are in a position to deliver a basic package of health services to students has been widely acknowledged during the 1990s. The appropriate level of services for the schools to offer depends on each country's operational and financial resources (Del Rosso and Marek, 1996).

A 1993 World Bank analysis concluded that most regions of the world could greatly benefit by implementing a limited package of five cost-effective public-health elements. This package could reduce 8% of the burden of disease in low-income countries for \$4 per capita and could reduce 4% of the burden in middle-income countries for \$7 per capita (World Bank, 1993).

The five elements are:

- an extended programme on immunization;
- school health programmes to treat worm infections and micronutrient deficiencies and to provide health education;
- programmes to increase public knowledge about family planning and nutrition, self-care or indications for seeking care, and vector control and disease surveillance activities;
- programmes to reduce the consumption of tobacco, alcohol, and other drugs;
- AIDS-prevention programmes with a strong component on other sexually transmitted diseases (World Bank, 1993).

The WHO Expert Committee on Comprehensive School Health Education and Promotion commented on this basic package that '[a]lthough school health programmes are explicitly mentioned in only one of the above elements, for a large portion of the world's population, schools could efficiently provide all five elements of the recommended package' (WHO, 1997c).

The Partnership for Child Development, UNICEF, the World Bank, and other agencies have used this framework to guide programme development in countries around the world. In the state of São Paulo, Brazil, a World Bank loan is helping to provide a broad range of school-based services including feeding programmes, health and nutrition screening of schoolchildren, nutrition and health education in the school curriculum, and school-based programmes for iron and vitamin A supplementation. A more limited package of services with low-cost, easy to implement interventions is applied in Guinea, where almost no prior nutrition and health programmes for school-age children existed. The elements of a school-based health package in Guinea initially include a deworming programme and iron and iodine supplementation, accompanied by education in health and hygiene (Del Rosso and Marek, 1996). Carefully monitored school-based health and nutrition programmes implemented by the Partnership for Child Development in Ghana, the United Republic of Tanzania, India, and Indonesia have now shown that the education sector is capable of delivering a simple health package (health education, anthelmintics, and micronutrients) to large numbers of schoolchildren (50,000 to 3 million) without the creation of specific infrastructures. These experiences suggest that the school system can contribute to health delivery as long as the package is simple, demands little school time, and is perceived as being appropriate to local needs (PCD, 1997).

The framework of the child's active learning capacity

In the early 1990s, in support of the mission to achieve Education for All, Beryl Levinger of EDC wrote for USAID and UNDP about the need to concentrate on improving a child's 'active learning capacity' (ALC). Consistent with theories in

education and the social sciences, she defined ALC as 'the child's ability to interact with and take optimal advantage of the full complement of resources offered by any formal or informal learning environment' (Levinger, 1994). The importance of this definition lies in its belief that to maximize learning, a child must be psychologically, emotionally, and physically well, able to concentrate on and participate actively in the learning process, able to pay attention and concentrate on tasks, and missing only a few days of school for illness or other reasons. The ALC framework focuses on improving the quality of life of the child as one of the most important factors in achieving the goals of Education for All.

This framework includes three primary variables: health and nutrition status, hunger level, and psychosocial support. *Health and nutrition status* refers to both current and prior physical or mental conditions, such as height for age, sensory abilities, nutritional status, and helminthic infections that influence a child's ability to take optimal advantage of learning resources and opportunities. *Temporary hunger*, especially if a child is malnourished, contributes to a child's distractibility, inattentiveness to environmental stimuli, and adaptive behaviours of passivity and inactivity, all of which impinge on the development of a child's ALC. *Psychosocial support* encompasses the degree to which parents, caretakers, community leaders, and other significant adults, community institutions, as well as values and norms encourage a child's independence and inquisitiveness and support expectations that favour overall learning as well as formal schooling.

Three variables are considered secondary in determining active learning capacity: prior learning experience, a child's learning receptiveness, and a child's aptitude for learning. *Prior learning experience* refers to a child's exposure to formal and informal situations conducive to acquiring new knowledge and skills, such as pre-school programmes. *Learning receptiveness* refers to a child's motivation and attention, which are influenced by health status and hunger level, as well as by the quality of the child/caretaker relationship. *Aptitude* relates to the time a child needs to learn a particular task, attend to stimuli, and concentrate.

The ALC framework represents a dynamic portrayal of the complex interplay among the determinants of educational outcomes, capturing the high degree of influence that health, nutrition, sensory impairment, and temporary hunger exert on the quality of the child and hence on the child's learning outcomes (Levinger, 1994).

This framework was used widely by the South African Active Learning Network, a group of NGOs, to develop materials, protocols, and broker links between the health and education sectors. Among the entities that participated were CIDA, WHO, UNICEF, the World Bank, and USAID. Many of the Network's activities were designed to promote the ALC model or to further its application.

Importance of frameworks in collaboration

Some of the most important lessons learned in recent years are the need for multisectoral collaboration and co-operation in order to move towards the health and educational goals of Education for All. 'Indicators of a favorable policy setting include a demonstrated ability to secure interministerial co-operation; a co-ordinated, intersectoral approach to human development; a history of support for community-based health and education programs; and a commitment at the highest political levels to programs that address questions of equity as well as growth' (Levinger, 1994).

For example, during the past decade, the World Bank co-ordinated information to enhance the quality of school health and nutrition programmes through its International School Health Initiative. Its experiences of good practice suggest that school-based health and nutrition programmes should be simple and locally relevant. The following items have been suggested to contribute to such programmes: life skills training, health services, school snacks fortified with micronutrients, an exemplary school environment, equitable school health policies, and strategies beyond the school (Dolan, 1999).

A shared framework and strategy for action often form the foundation of successful collaboration. Even when there is no one unifying framework, collaboration is more likely when the participants at least understand and respect one another's language, methods, and frameworks. In either case, the partners can identify their unique strengths in the context of a framework and channel their specific contributions to move forward a shared agenda.

As the 1990s drew to a close, some of the major leaders and change agents at the world level came together to discuss how they might build on the frameworks since Jomtien and collaborate on a common framework for school health, such as FRESH. Such collaboration may allow partners to harness more effectively their considerable human and financial resources in order to address the health needs of a greater number of children and adolescents in schools around the world.

The FRESH Framework: a concerted effort to focus resources on effective school health

A framework proposed jointly by WHO, UNICEF, UNESCO, and the World Bank suggests that there is a core group of cost-effective components that could form the basis for intensified and joint action. These agencies are now developing a partnership for Focusing Resources on Effective School Health (FRESH), launched at the Education for All Conference in Senegal in April 2000.

Each component of the framework stresses that a young person's health is one of the many important factors that must be adequately addressed to achieve any country's educational goals. As Bundy comments, 'Good health and good education are not ends in themselves, but rather [the] means which provide individuals with the chance to lead productive and satisfying lives. School health is an investment in a country's future and in the capacity of its people to thrive economically and as a society' (Bundy, personal communication, e-mail, 1999).

Building on the frameworks developed in the past decade, this shared view serves as a basis for an effective school health and nutrition programme. Its four components are intended to be made available together in all schools.

- Health-related policies in schools.** Health policies in schools, including policies for skills-based health education and the provision of some health services, can help promote the overall health, hygiene, and nutrition of children. Good health policies should also ensure a safe and secure physical environment and a positive psychosocial environment and should address issues such as the abuse of students, sexual harassment, school violence, and bullying. By guaranteeing the continued education of pregnant schoolgirls and young mothers, school health policies will help promote inclusion and equity in the school environment. Policies that help to prevent and reduce harassment by other students, and even by teachers, also combat the reasons why girls withdraw or are withdrawn from schools. Policies regarding the health practices of teachers and students can reinforce health education by requiring that teachers do not smoke at school and thus act as positive role models for their students. The process of developing and agreeing on policies draws attention to these issues. The policies are best developed by involving many levels, including the national level, and teachers, children, and parents at the school level.
- Safe water and sanitation facilities.** It is a realistic goal in most countries to ensure that all schools have access to clean water and sanitation. Without clean water and adequate sanitation, hygiene education is meaningless. The school environment may even damage the health and nutritional status of its children if it increases their exposure to hazards such as infectious diseases carried by the water supply. By providing clean water and sanitation, schools can reinforce the health and hygiene messages and act as an example to both students and the wider community. This in turn can lead to a demand from the community for similar facilities. Sound construction policies will help ensure that facilities address issues such as gender access and privacy. Separate facilities for girls, particularly adolescents, are important in reducing drop-out at menstruation and even before. Sound maintenance policies will help ensure the continuing safe use of these facilities.

- **Skills-based health education.** This approach to health, hygiene, and nutrition education focuses on the development of knowledge, attitudes, values, and life skills needed to make and act on the most appropriate and positive decisions concerning health. Health in this context extends beyond the physical to include psychosocial and environmental health issues. The development of attitudes towards gender equity and respect between girls and boys and the development of specific skills, such as dealing with peer pressure, are central to both an effective skills-based health education and positive psychosocial environments. With these skills, individuals are more likely to adopt and sustain a healthy lifestyle during their schooling and for the rest of their lives.
- **School-based health and nutrition services.** Schools can effectively deliver some health and nutrition services as long as the services are simple, safe, and familiar and address problems that are prevalent and recognized as important in the community. If these criteria are met, then the community sees the teacher and school more positively, and teachers see themselves as playing important roles. For example, micronutrient deficiencies and worm infections may be effectively dealt with by infrequent (half-yearly or annual) oral treatment; changing the timing of meals or providing a snack to address short-term hunger during the school day – an important constraint on learning – can contribute to school performance; and providing spectacles will allow some children to participate in class fully for the first time.

Within this framework, these four components are intended to be supported by effective partnerships between teachers and health workers, effective community partnerships, and pupil awareness and participation (WHO, UNESCO, UNICEF, World Bank). ■

CHAPTER VI

Major global trends: developments since Jomtien

Chapter IV described the status of the school health field leading up to Jomtien. This chapter shows some of the major trends, events, and activities that have occurred over the past ten years. With a scope as broad as a decade and a platform as enormous as the world, only selected examples are given. Table III lists selected on-line resources for school health and additional information. Table IV provides examples of major trends and activities, barriers, and future actions for the field of school health across regions and countries.

Several major global trends over the past decade have dramatically influenced the scope and direction of school health work:

1. **The AIDS pandemic stimulated a new demand and urgency for school health.**
2. **There was a gradual move from individual to multiple strategies and to integrated and co-ordinated approaches to school health programmes.**
3. **New mechanisms have emerged for multisectoral collaboration.**
4. **Student and community participation has been an important factor in promoting school health.**
5. **Skills-based methods for health education have gained recognition and greater use.**
6. **The documentation and dissemination of evidence of effectiveness have increased.**
7. **New tools have been tested for assessment, planning and monitoring.**
8. **Donor recognition of the field and investment have both increased.**
9. **International conferences have addressed school health.**
10. **Various barriers still exist that can hinder progress towards effective and sustained school health and nutrition interventions.**

These points are explained more fully below.

1. The AIDS pandemic stimulated a new demand and urgency for school health.

A defining characteristic of the 1990s has been the influence of the HIV/AIDS pandemic on school health policies and programmes. Many children have been orphaned and many teachers and students are dying. While this pandemic closed the school door to many children and teachers affected directly or indirectly by it, it also opened many doors to school health programmes (B. Dick, personal communication, 1999).

Because education to increase protective behaviours is one of the few measures available to prevent HIV, and because pre-

vention ideally should begin before the onset of sexual activity or alcohol and drug use, schools became a very important setting for delivering life-saving interventions to children and adolescents worldwide.

As educators and health workers began to plan and implement school-based efforts to prevent HIV infection, many in the field were asking which strategies would be most likely to motivate people to adopt protective behaviours. Such questioning, in the face of the threat of HIV infection, led to reviews of lessons learned from health education, sex education, family life, and reproductive health education; increased calls for the implementation and improvement of such programmes; the innovative use of skills-based methods; the cross-fertilization of ideas and strategies among experts; and the involvement of young people in designing and delivering programmes. UNESCO, for example, launched a global Programme of Education for the Prevention of AIDS, which focuses on integrating HIV/AIDS education into school curricula. Its main goal is to put in place large national programmes that draw on the experiences of other projects and programmes. UNESCO's resource centres disseminate numerous materials and documents on HIV/AIDS education, along with seminars and training for ministerial staff and teachers (Dolan, 1999).

Since Jomtien, the following types of activity illustrate how the complex and sensitive issues surrounding HIV/AIDS served as an impetus for strengthening national, regional, and international efforts to improve health through schools.

On a national level: In Zimbabwe, which has one of the highest rates of AIDS cases on the African continent, the Ministry of Education and Culture initiated an AIDS Action Programme targeting students and teachers in grades 4 to 7. More than 2,000 teachers have been trained to use not only specified AIDS educational materials, but also participatory life skills methods. National programmes fostered by UNICEF and focusing on life skills have strengthened school health efforts by helping teachers to explore their own attitudes and values about health, to establish an open and positive classroom climate, to place education about HIV/AIDS in the context of a general programme on health, personal development, and living skills, and to use positive approaches that emphasize an awareness of values, assertiveness, and other relationship skills (Gachuhi, 1999).

On a regional level: In 1993, participants in the Inter-Country Consultative Meeting on Comprehensive School Health Education, convened by the WHO Regional Office for South-East Asia, recommended that in view of the physical, social, and psychological needs of children, adolescents, and youth and the emerging health problems (AIDS/STD, drug and alcohol and tobacco use), comprehensive school health education be given the status of a separate subject in the school curriculum, in addition to being integrated into other relevant subject areas. Furthermore, the participants recommended that

because comprehensive school health education cannot be implemented effectively by teachers without appropriate training, every member country in the South-East Asia Region should give priority to such training, including adequate financial support for strengthening pre-service and in-service training in health for teachers (WHO, 1993).

On an international level: In 1995, EI, WHO, UNESCO and UNAIDS, in collaboration with CDC and EDC, created an alliance to increase the interest and involvement of teachers' unions in HIV/AIDS prevention and in strengthening school health programmes. In July 1998, at the EI Second World Congress, teachers' unions from around the world adopted a resolution on Health Promotion and School Health. It calls on EI member organizations to:

- Play an active role in the elaboration of school health education policies in close collaboration with the ministries of education and health.
- Take more account of the crucial role that the school system and workers in education can play through health education to prevent HIV/AIDS and STDs and drug abuse.
- Become more involved at every stage of the conception, implementation, and evaluation of school health programmes.
- Take action to ensure that all workers in education receive initial and in-service training, enabling them to promote health and health education.
- Combat all forms of discrimination and exclusion affecting students or workers in education affected by HIV/AIDS or excluded because of their genetic characteristics.
- Establish or develop contacts with parents and health professionals at the local or national level.
- Commit themselves, especially in the framework of the Health-Promoting School, to make the school a healthy place that offers a reliable infrastructure to guarantee protection from diseases, violence, and harmful substances.

Such actions show an increased recognition of the need for and value of working collaboratively to address HIV/AIDS while also improving school-based efforts that address other issues affecting health and learning. For example, the use of tobacco and other psychoactive substances has also stimulated interest and action in the field of school health during the past decade, especially in the Eastern Mediterranean and the Western Pacific regions. Often, however, efforts were implemented as separate, vertical programmes (V. Chandra-Mouli, personal communication, 2000).

2. There was a gradual move from individual to multiple strategies and to integrated and co-ordinated approaches to school health programmes.

During the 1990s, frameworks evolved that included multiple strategies – rather than individual approaches – to promote health and nutrition through schools. For example, WHO's Health-Promoting School model and its supporting tools (such

as *Local Action: Creating Health-Promoting Schools*, WHO, 2000) involve various participants at the school level to foster health and learning with *all* the measures at their disposal. In UNICEF's Child-Friendly Schools Framework, the school culture, teaching behaviours, and curricula content are all conducive to learning and learners.

In the United States, the book *Health Is Academic* outlines the concept and components of co-ordinated school health programmes (<http://www.edc.org/HealthIsAcademic>). It was developed by EDC, with funding by CDC/DASH, and reviewed by more than 300 professionals before it was published in 1998. This book and other efforts have had a marked effect on moving national school programmes towards a co-ordinated approach to school health. The tendency towards more integrated and co-ordinated approaches to school health is likely to continue and will balance content from traditional disciplines. Health education can be co-ordinated with or integrated into other subjects such as science, technology, physical education, home economics, and social studies.

There are some notable examples of implementing co-ordinated school health initiatives with multiple strategies, which can both inspire and guide the field in the decade to come. For example:

- The Ministry of Health in Guinea, in collaboration with other agencies, developed the following components for their Equity and School Improvement Project (PASE), using data from baseline studies and the World Bank's International School Health Initiative's planning framework: teacher development in the areas of helminth treatments, health education, and referral for health services; and health services in the schools to include antihelminth drugs, iodine, and iron supplementation. Central to this project is community partnership and partnership across sectors. A 1997 process evaluation study revealed that the programme was viewed positively by 99.3% of children and 100% of schools and had an impact on enrolment, re-enrolment, and increased participation by parents. Expansions are planned to include antimalarials, vaccination, reproductive health, and HIV/AIDS/STD education, campaigns to combat substance abuse, and measures to reduce hunger (PCD, 1999f).
- The county of Lianjiang, China, launched a comprehensive approach to creating Health-Promoting Schools in rural China, starting with deworming. The project included guiding policy, collecting baseline data, training staff, mobilizing the community, two sessions of deworming services, improving the latrines and safe water supply, and related health-education activities. Evaluations of this approach showed reductions in helminthic infections and egg contamination in school environments and positive changes in the students' knowledge and preventive behaviours (Xu et al., 2000).

- A high school in the United States set up integrated services that included individual and family counselling, primary and preventive health services, drug and alcohol abuse counselling, crisis intervention, employment counselling, training, and placement, summer and part-time job development, recreational activities, and referrals to health and social services. During the first two years of the programme, the number of pregnancies among the students in this school dropped from 20 to 1, drop-outs were reduced from 73 to 24, and suspensions were reduced from 322 to 78 (Knowlton and Tetelman, 1994).

3. New mechanisms have emerged for multisectoral collaboration.

During the 1990s it became increasingly apparent that in order for schools to improve health, international, national, provincial, and local agencies, education and health professionals and parents and communities will need to work *together* on behalf of young people (Kolbe et al., 2000). A recent survey of donors and agencies found that 'there is a move towards inter-agency school health planning, monitoring and evaluation, particularly in the UN. This reflects a move by the UN system and bilaterals towards a sector-wide approach to funding, and away from a project approach' (Dolan, 1999). For example, a situation analysis that includes assessments of adolescents' needs and responses was developed as an inter-agency activity by UNDP, UNESCO, UNFPA, WHO, and PCD and has been evaluated by WHO in Ghana, Zimbabwe, Botswana, Uganda, and Kenya (Dolan, 1999). The World Bank's International School Health Initiative has helped to create global partnerships that focus on a common school health agenda (D. Bundy, personal e-mail, 2000). Agencies and donors have also expressed interest in a school health website and mailing list, as is currently being developed by PCD with the World Bank, which will provide a vehicle for greater collaboration (Dolan, 1999).

The Partnership for Child Development (PCD) as established programmes that emphasize the development of national collaborations as a part of locally managed programmes, the core of which is the essential partnership between the health and education sectors. There are now PCD research programmes or activities in more than fourteen countries around the world that are supported by a broad range of international agencies (UNDP, WHO, UNICEF, World Bank), bilateral agencies (USAID, UK DFID), and charities (Rockefeller Foundation, Edna McConnell Clark Foundation, James S. McDonnell Foundation, Wellcome Trust, and Save the Children Federation). The Partnership was set up to develop the intersectoral collaborations necessary to establish or strengthen school health programmes. This international initiative helps to provide technical assistance and support so that low-income countries can monitor and evaluate the costs, processes, and impact of these programmes (PCD, 1999h).

A major new global partner is Education International. Established in 1993, EI represents more than 25 million teach-

ers and workers in the education sector, and more than 250 teachers' unions in 150 countries are affiliated with EI. EI has adopted resolutions to promote health and nutrition for its membership and has also participated extensively with WHO, UNAIDS, UNESCO, and HHD/EDC in providing professional development on health promotion for members and HIV prevention initiatives.

Stimulated by WHO Headquarters, WHO Regional Offices, and others, networks have emerged as a means of communication and technical support. Regionally, networks of persons responsible for school health from both the education and health sectors have been created to share experience and foster collaboration across sectors. One of these networks is the European Network of Health-Promoting Schools, a consolidating initiative between the health and education sectors (European Commission et al., 1996). WHO's Mega Country Health Promotion Network serves as a new mechanism to foster cooperation between the ministries of education and health in the eleven most populous countries, which face the common problem of size. In the E-9 Initiative, sponsored by UNESCO, UNICEF, and UNFPA, leaders of the nine most populous developing countries pledged to universalize primary education and reduce illiteracy in their respective countries. However, such intra- and inter-country networks do not yet involve every country.

On a national level, collaboration between the health and education sectors has been critical to programme development. National intersectoral co-ordinating committees have been formed in a number of countries, including Samoa, Cambodia, Indonesia, and the Lao People's Democratic Republic (Lin, 1999). In Viet Nam, School Health Insurance was introduced in 1995 as a joint effort of the Ministry of Health and the Ministry of Education and Training. This collaborative achievement allowed the government to respond to two major concerns of Vietnamese parents: the protection of their families against adverse consequences of their children's ill health, and the creation of school conditions and programmes that are conducive to health and that help children and their families to stay healthy (Carrin et al., 1999).

4. Student and community participation has been an important factor in promoting school health.

During the 1990s, many publications and actions have recognized and strongly supported youth and community involvement as important for effective school health and nutrition programmes. WHO's Adolescent Health Programme concluded that youth involvement ensures project relevance, acceptability, dedication to project objectives, long-term effectiveness, and personal development for the young participants (WHO, 1997a; WHO/UNFPA/UNICEF, 1995). A paper prepared for the Conference on Comprehensive Health of Adolescents and Youth in Latin America and the Caribbean in 1996 states that 'involvement of youth is critical at every step along the way' (Burt, 1998).

The European Network of Health-Promoting Schools (ENHPS) has published many case studies that show how students have been involved in planning, implementing, and evaluating various school projects. In Gandrup School in Denmark, students have been involved in planning. The pupils, who claimed that they learn more when they are able to influence the choice of subjects, discussed the WHO definition of health and then identified conditions they wished to change in their school life, the community, or their own lives (Jensen, 1997b). In another project at the same school, students were involved in implementing programmes. Fourth-grade pupils taught second-graders. This project showed that 'pupil participation is a key prerequisite of sustaining their involvement and motivation' (Jensen, 1997a). In a school in Finland, students were actively involved in the evaluation of a school democracy project in which they evaluate themselves, their actions, and their progress twice a year. 'This is important to the young people because they can compare themselves with the prevailing norms and then decide themselves in which ways they want to improve or change.' Feedback from teachers, pupils, and others has proved that this project is worth continuing (Poentinen, 1998).

Family and community involvement has also been strongly supported during the past decade. A recent UN study included community and family involvement as a vital factor for 'programmes that work'. Community members must be recognized as central actors rather than as passive beneficiaries. In the United Republic of Tanzania, for example, severe malnutrition disappeared during a programme featuring growth monitoring in the community (UNICEF, 1998b).

Active community participation has also played an increasingly prominent role in effective collaboration. An extensive analysis of the progress in the development of education in Africa found that 'the role of communities as providers of education is becoming more complex and more substantive. . . . Communities are becoming involved in matters previously regarded as within the domain of professionals and ministries. Communities are currently involved in the recruitment of teachers, the negotiation of teacher salaries, teacher management (Guinea, Cameroon, Senegal, Chad), school management (Côte d'Ivoire, Zanzibar, Chad), the selection of school curricula (Zanzibar), school mapping (Côte d'Ivoire, Gambia), financial management (Madagascar, United Republic of Tanzania), and the establishment and management of pre-schools (Zanzibar). There appears to be a partial shift of the locus of action and control from the central ministries to the communities' (ADEA, 1999, p. 64).

Local expertise is also indispensable to effective programmes and to identifying and solving local problems. Africa, for example, has a wealth of community associations, including parent-teacher associations, which can channel community participation and responsibility. The early involvement of such organizations in developing a programme maximizes the community's commitment and the programme's sustainability. In Ghana, communities 'revealed not only their interest in

alleviating the health and nutrition problems of their school-age children but also a willingness to help pay for these services' (Del Rosso and Marek, 1996).

5. Skills-based methods for health education have gained recognition and greater use.

Research has demonstrated the effectiveness of skills-based approaches in promoting healthy choices and in preventing or delaying risk behaviours. Such skills include refusal, communication, critical thinking, and other life skills. Interactive methods, which give young people in the classroom the opportunities to practise these skills with regard to important health issues, are the most critical factor in achieving success. Increasingly, schools are giving priority to teaching life skills. Numerous products have emerged to support skills-based approaches. Many countries (e.g. Zimbabwe, Cameroon, Colombia, Costa Rica) have carried out skills-based health education projects. Uganda launched a very well-planned, comprehensive school health initiative. Along with creating a network of health educators at the district level for health education activities, skills-based health education was integrated into the basic science curriculum and also became part of the examination process (Hubley, 1998). In September 1999, the Pan American Health Organization convened a conference with Latin American and Caribbean countries to plan how to strengthen skills-based health education in the region.

6. The documentation and dissemination of evidence of effectiveness have increased.

The past ten years have seen an explosion in the number of documents published by international organizations to report on the effects of single interventions, such as treatments for intestinal worms or nutritional deficits to reduce health problems and improve learning. Others, such as *Promoting Health through Schools, Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion* (WHO, 1997c) and *Class Action: Improving School Performance in the Developing World through Better Health and Nutrition* (Del Rosso and Marek, 1996), have synthesized the findings of hundreds of studies to inform and convince policy-makers and practitioners that the status of a child's health is a critical variable in achieving the goals of Education for All. One of the greatest innovations of the past decade is the use of the World Wide Web for global knowledge sharing. The Web, relatively untapped for school health in 1990, is broadly disseminating evidence of the best practices worldwide in timely and cost-effective ways. For example, the Partnership for Child Development and the World Bank are currently developing a website and moderating an e-mail discussion list for donors, agencies, and governments in order to share school health-related experiences, research, programming, and related issues: <http://www.ceid.ox.ac.uk/schoolhealth> (Dolan, 1999).

Table III lists many of the agencies and organizations that have gone on-line to promote school health among a larger and more diverse audience via the Web.

7. New tools have been tested for assessment, planning and monitoring.

Several tools have been pilot tested, including those for:

- (1) **Situational Analysis**, developed by the Partnership for Child Development in collaboration with other agencies, including UNICEF, the Edna McConnell Clark Foundation, WHO, USAID, PAHO, and the World Bank (<http://www.ceid.ox.ac.uk/schoolhealth/download%20documents.htm>). The goal of the situational analysis is to guide the design and evaluation of school-based health and nutrition programmes.
- (2) **Rapid Assessment and Action Planning Process (RAAPP)**, initiated by WHO, PAHO, HHD/EDC, EI, and national agencies in Indonesia, Bolivia, and Costa Rica. Consistent with the HPS framework, RAAPP includes instruments, data collection, analysis procedures, and strategic planning tools. Its purpose is to assess and strengthen a country's infrastructure to support school health programmes (Vince-Whitman et al., 1997). Rapid Assessment Tools have also been used by various other WHO programmes recently (e.g. WHO, n.d.c).
- (3) **UNESCO/WHO Survey on National School Health Policies**, administered by UNESCO in December 1999, includes items to assess which ministries are responsible for school health issues and the existence of national policies relating to the school environment, school health services, and the teaching of health in primary and secondary schools. Preliminary findings were presented at the World Education Forum 2000 (UNESCO, n.d.; Birdthistle, 2000).
- (4) **Health Behaviour in School-aged Children (HBSC)**, developed by WHO/EURO and adopted by more than twenty-five countries to monitor health and health-related behaviours and social influences on young people (Wold and Aar, 1990; Wold, 1993; <http://www.uni-bielefeld.de/gesundhw/hbsc/intpub.html>).
- (5) **Youth Risk Behavior Survey (YRBS)**, developed by the Division of Adolescent and School Health of the US Centers for Disease Control and Prevention and piloted in more than ten countries, including China and the Russian Federation. The YRBS collects data through schools describing the prevalence of high-risk behaviours among young people (<http://www.cdc.gov/nccdphp/dash/yrbs/index.htm>). Its purpose is to monitor whether these behaviours change over time (Kolbe et al., 1993).
- (6) **The joint UNESCO/UNICEF International Assessment Survey Project** helps countries to collect empirical data describing health-related learning outcomes and health-related teaching and learning conditions in schools. Two prototype instruments have been developed: (a) **Monitoring Learning Achievement (MLA)**, which has a

specific section labelled 'life skills' containing questions about health-related knowledge; and (b) **Conditions of Teaching and Learning (CTL)**, which contains questions about school facilities and health, safety, and security measures taken by schools. The surveys provide nationally representative data obtained from fourth-grade students (stratified random samples). They have been adapted and implemented in approximately forty countries as part of the EFA 2000 assessment (Chinapah, 1997).

(7) **School Health Policies and Programs Study (SHPPS)**, developed by the US Centers for Disease Control and Prevention to monitor improvements in eight components of the school health programme throughout the United States: <http://www.cdc.gov/nccdphp/dash/shpps> (Kolbe et al., 1995).

The use of each of these tools has been fairly limited. Still needed are instruments to monitor progress worldwide, based on common and comparable data items and data-collection methods.

In the coming decade, FRESH partners plan to work collaboratively to strengthen the monitoring and evaluation of school health efforts, using and adapting the tools mentioned above.

8. Donor recognition of the field and investment have both increased.

Donors and philanthropic agencies appear to have an increased commitment to providing financial and technical support for improving health through schools. A survey of donor and agency support for school-based health and nutrition programmes found that increased donor interest and investment in the health and nutrition of the school-age child was most apparent in the United Nations system but also appeared in some of the bilateral organizations and increasingly among NGOs (Dolan, 1999). Some examples include:

- UNICEF currently supports a range of school health programmes in water, sanitation, and hygiene; life skills/AIDS; child-to-child and extracurricular activities; and health and nutrition, including the provision of micronutrients, anthelmintics, and malaria tablets.
- The World Bank's investment has primarily been through educational projects, but also through health, nutrition, and social protection credits. The Bank has created a specific school health thematic group and has a specific school health initiative for Africa. An increased investment in school health is also expected through a partnership on this issue with PAHO for Latin American countries (D. Bundy, personal e-mail, 2000).
- The Canadian International Development Agency is a leading donor in nutrition programming. Since 1992, CIDA has contributed more than \$Can 87 million to nutrition projects and an additional \$Can 120 million to integrated projects that combine nutrition with health, basic education, and income-generation activities.

- CARE supports a range of school health and nutrition projects, including school health education in Kenya using child-to-child approaches; a school nutrition project with community-based activities in the Lao People's Democratic Republic; and a Children's Health and Environment magazine project in Thailand (Dolan, 1999).

For more detail about a broad range of school health and nutrition programmes carried out and financed by donor agencies, refer to *School Based Health and Nutrition Programmes: Findings from a Survey of Donor and Agency Support* (Dolan, 1999); <http://www.ceid.ox.ac.uk/schoolhealth/download%20documents.htm>

9. International conferences have addressed school health.

During the past decade, many major international conferences have brought together important leaders and change agents and gained international attention. School health issues were addressed in various contexts as part of these conferences. Table V gives an overview of selected conferences and the school health issues they addressed.

10. Various barriers still exist that can hinder progress towards effective and sustained school health and nutrition interventions.

Despite the encouraging global trends of the past decade, barriers, controversies, and missed opportunities continue to impede the implementation and effectiveness of school programmes at the national and local level. Significant work is still needed to make the hope of a health-promoting and child-friendly school a reality for most schools.

Country and regional representatives around the world reported the following national barriers:

- The absence of political concern and national legislation to support school health programmes.
- The lack of a well-defined national strategy and policies for the promotion, support, co-ordination, and management of school health programmes.
- Limited funds allocated for school health programmes or the inequitable distribution of existing resources.
- Weak links between the health, education, and other relevant sectors.
- The failure to escalate pilot projects to large programmes.
- The lack of data, particularly relevant disaggregated data, helpful to programme planning.

Obstacles to effective partnerships for school health were identified by participants in the World Education Forum in Dakar (Senegal) in April 2000:

- Different mind-sets and ways of thinking about conceptual frameworks.
- Cultural barriers.
- Competition for funding.

- Hostility towards partnerships.
- A lack of clear guidance in creating effective partnerships.

Obstacles repeatedly identified at the local and school levels include:

- A lack of awareness and support for school health programmes.
- An inability to sustain the quality and even the existence of school health programmes.
- The overcrowding of pupils in schools and of content in the curriculum.
- A scarcity of trained people (including teachers) to implement school health programmes.
- The inadequate supply and production of teaching and learning materials and resources, including supplies, books, and equipment.
- Limited or no funding to support health activities.
- A lack of monitoring and evaluation of current school health programmes.
- The deterioration of the initial positive effects of many school health interventions owing to unsupportive conditions in the school and its surrounding environment (e.g. the availability of drugs, tobacco, and alcohol; messages in the media that contradict messages promoted at school).

Finally, many schools still exemplify unhealthy living, where teachers and sometimes students smoke, where the only food choices are unhealthy, dirt is prevalent, and harassment is unchecked. There is an urgency and opportunity to use the knowledge, momentum and international commitment gained since Jomtien to tackle the operational challenges that impede progress within countries and within schools.

To overcome these barriers, strong and genuine partnerships at all levels – i.e. between different sectors, between governmental and non-governmental agencies, between teachers and health workers, between school and parents and the larger community – are critical to successful school programmes. To make partnerships work, it is important to remember the common denominator that connects the various sectors, disciplines, and specialists: the larger social development agenda and the welfare of children.

The FRESH framework is a good example of how international agencies can work together. To achieve similar co-operation at national and local levels, the following WHO publications may provide useful guidance:

- *Improving School Health Programmes: Barriers and Strategies*, WHO/HPR/HEP/96.2;
- *Local Action: Creating Health-Promoting Schools*, WHO/HPR/HEP/98.7.

(Both are available at: www.who.int/hpr/gshi/docs/index.html; or from WHO, Department of Health Promotion, Noncommunicable Disease Prevention and Surveillance, 20 Avenue Appia, CH-1211 Geneva 27, Switzerland.)

Regional trends

Progress in school health and nutrition has varied dramatically across regions and nations. Table IV shows major regional trends and accomplishments in school health and nutrition in Africa, the Americas, Europe, the Middle East, South and East Asia, and Australia during the past decade. Barriers to school health experienced in these regions and activities planned for the future are also listed, for example:

- In Central and Eastern Europe, many of the formal mechanisms that were in place in 1990 providing social services to young people, including those through the education system, have deteriorated. This change occurred when the communist system fell apart and with it the numerous structures that were reaching out to young people.
- In the Western Pacific, extensive accomplishments have taken place to create Health-Promoting Schools, supported by national policy frameworks and a regional technical assistance network.
- Countries such as Guinea and Indonesia have systematically developed comprehensive school health programmes with incentives and awards for local schools, and African countries such as Uganda and Zimbabwe have made excellent progress with skills-based health education.

During the past decade, we have seen the best thinking about education and health coalesce into several frameworks that identify the core principles shared by professionals and practitioners around the world. Definitive research results proliferated, and collaborative efforts expanded. Even failures and the tragedy of HIV infection have taught us profound lessons that can guide our future efforts.

The access to and attainment of education and health must therefore drive all development policies, and many countries may need to rethink their social and economic priorities. Education for All should be seen as the foundation for access for each and every person to each and every level and form of education, and the quality of education should be seen, not only in terms of educational standards, but also in terms of relevance. The direct links to health are clear: education has a fundamental role to play in personal and social development, and it is unlikely that the goals of education will be achieved without significant improvements in the health of both students and teachers. ■

Appendix: Tables

Table I: Examples of the evidence of effectiveness of school-based interventions

How does this issue affect education?	Examples of evidence that schools can effectively address this issue
Safe water and sanitation	
<ul style="list-style-type: none"> One result of inadequate sanitation is diarrhoea, which kills 2.2 million children per year and consumes valuable resources in health care, preventing families and nations from developing further. Diarrhoea has an impact on children's health in such a way that they are ill equipped for learning: diarrhoea episodes leave millions of children underweight, mentally and physically stunted, easily susceptible to deadly diseases, and drained of energy (Khan, 1997). 	<ul style="list-style-type: none"> As 'girls in particular are likely to be kept out of school if there are no sanitation facilities' (UNICEF, 1997), especially after they start menstruating, adequate sanitation in schools is likely to encourage their attendance. Education about water/sanitation/hygiene in schools can encourage the construction of facilities and their subsequent use in school and in the community. Schools can, with community participation, provide the necessary learning experiences to encourage children to practise good hygiene in school, in their community, and later in life. Sanitation facilities in schools can also provide the community with an example of improved sanitation technologies (Hubley, 1998). In the Lushoto Enhanced Health Education Project in the United Republic of Tanzania, health education has been taught as an extracurricular activity to the whole school for one hour three afternoons a week, and for 15 minutes every day during morning parade and inspection time. After only a few months, changes in the school environment were already evident: all the intervention schools boiled water for the children to drink and stored it in newly purchased covered buckets. In most schools the latrines were cleaned more regularly, and the process of constructing extra latrines had either been identified as a priority or was in process (PCD, 1999c). In Bangladesh, the International Centre for Diarrhoeal Disease Research set up a programme to involve high schools in sanitation activities. The evaluation found that almost all (91%) of those individuals who had built latrines during the programme said that the need to do so had been communicated to them by the pupils (Bilqis et al., 1994). In Canada a pilot programme for first-grade children promoted handwashing. The evaluation showed that children in the programme made 25 fewer visits to the physician, used 86% fewer medications, and were absent 22% less often than they had been the previous year (Monsma et al., 1992).
Helminth infections	
<p>Helminth infections have various adverse affects on children:</p> <ul style="list-style-type: none"> They decrease the health and well-being of children. While they seldom lead to mortality, they are associated with high levels of morbidity (Jamison and Leslie, 1990) such as anaemia, intestinal obstruction, lesions, blindness, diarrhoea, and cough (WHO, 1997d). Children heavily infected with worms eat less, and their absorption and retention of certain nutrients are impaired. As a result of this helminth-related 	<ul style="list-style-type: none"> Mass treatment of helminth infections, given to children in school, is considered a powerful tool for improving health (UNDP, 1992). Four very effective, safe, and inexpensive anthelmintic drugs have been on the forefront of satisfactory treatment over the past 15 years: Mebendazole, Albendazole, Levamisole, and Pyrantel. A single 500 mg dose of Mebendazole, for example, given three times annually, significantly improves the nutritional status of school-age children, despite intense transmission, reinfection or incomplete deworming (WHO, 1998a). Helminth treatments can be very cost-effective. Broad-spectrum, single-dose drugs such as Albendazole (US\$0.20 per dose) and Mebendazole (\$0.03 per dose) are effective against several species of worm. They are both nearly 100% effective in eradicating roundworm, and Albendazole is about 98% effective in reducing hookworm (Del Rosso and Marek, 1996). In the West Indies, a single treatment for whipworm infection, without nutritional supplements or improvements in education, improved children's learning capacity to the point that their test scores matched those of children who were uninfected (Bundy et al., 1990).

How does this issue affect education?	Examples of evidence that schools can effectively address this issue
<p>malnutrition, their learning capacity and their ability to pay attention and concentrate diminish (Del Rosso and Marek, 1996).</p> <ul style="list-style-type: none"> ● These infections decrease the learning potential of millions of children. They affect tissues and organs, compromising children's attendance and performance at school and contributing to children being listless, inattentive, absent, and falling behind. Research shows that even when infections seem to produce no overt symptoms (e.g. diarrhoea, abdominal pain), they can diminish growth and cognitive development (Nokes et al., 1992). ● Intestinal helminths are stunting the growth and development of children, especially in countries that must count on their development to achieve progress. Roundworm usually leads to impaired growth and development as well as malnutrition and abdominal obstruction. Whipworm is associated with growth retardation, chronic colitis, and iron deficiency anaemia (Berkley and Jamison, 1991). 	<ul style="list-style-type: none"> ● In Jamaica, the removal of whipworms in school-age children led to significant improvement in long- and short-term memory. After nine weeks, there were no significant differences in cognitive function between treated children and an uninfected comparison group (Nokes et al., n.d.). ● In Zanzibar, where worm infections were virtually universal, three Mebendazole treatments were given to all schoolchildren. This programme reduced the incidence of severe anaemia by almost 40% and the prevalence of iron deficiency by 20%. The treated group showed marked nutritional improvements (WHO, 1998a). ● In China, helminth interventions (including semi-annual deworming and single doses of Albendazole given to most students and community members) were implemented, together with other interventions, as one approach in creating Health-Promoting Schools. The evaluation showed that students' knowledge about health and 'good health' behaviour improved; the prevalence of helminth infections in students declined; environmental egg contamination in schools decreased; school health education was established; school physical environments improved (addition of latrines; water supply for handwashing; improvement of kitchen facilities); health-related school policies were established; the school psychosocial environment improved; the relationship between school and community strengthened; and family health behaviour was positively affected (Xu et al., 2000). ● WHO recommends that the health education component that accompanies helminth treatments should be aimed at influencing healthy behaviours and conditions. The success of helminth interventions depends substantially on whether individuals are willing and able to practise behaviours that reduce the likelihood of infection such as washing hands before eating, not walking in the field without sandals, not urinating in water with which others come into contact, not bathing or washing in infected water, and not eating unwashed raw vegetables. Essential to effective school health education programmes is therefore a clear and precise delineation of behaviours specifically relevant to helminth infection as well as activities that address the knowledge, values, beliefs, skills, and attitudes that influence behaviours associated with this infection (WHO, 1998d).
Nutrition	
<p>Adequate nutrition, or the lack thereof, affects children's health and well-being in many ways, which in turn affects their ability to learn and take part in education:</p> <ul style="list-style-type: none"> ● Malnutrition can cause death and lead to the impaired growth and development of millions of children. Impaired growth may cause children to fall behind in weight and height measures, and they may consequently not be admitted to school in time (WHO, 1998d). ● Good nutrition strengthens the learning potential and well-being of children. Children with more adequate diets score higher on tests of factual knowledge than those with less adequate nutrition (WHO, 1998d). ● A diet deficient in vitamin A can lead to night blindness and permanent damage of the eye and may increase susceptibility to infections. A diet deficient in iodine can lead to goitre and impaired 	<ul style="list-style-type: none"> ● In China, iodine supplementation through iodized salt brought the average hearing capacity of iodine-deficient schoolchildren close to that of children without iodine deficiencies (Berkley and Jamison, 1991). ● In India, iron supplementation virtually eliminated the differences in school performance and IQ scores between schoolchildren previously deficient in iron and those without iron deficiencies (Seshadri and Gopaldas, 1989). ● In Thailand, diets of children up to 9 years old were supplemented with vitamin A. As a result, their iron stores and resistance to infection improved (Bloem et al., 1990). ● In Ghana, a study by the Partnership for Child Development showed that taking iron supplements for six weeks led to a very significant improvement in school performance, compared with that of a placebo group. Six months later, there were again no differences between the two groups of students – signalling the need for periodic supplementation. The study also showed that teachers <i>could</i> effectively administer the iron (Berg, 1999). ● In India, a school health package consisting of biannual treatments with an anthelmintic, vitamin A, and iron was integrated into the Mid Day Meal Programme. The impact evaluation showed a decrease in the prevalence of intestinal parasitic infections, an increase in average blood haemoglobin concentrations, and a decrease of signs of vitamin A deficiency (PCD, 1999d). ● In Jamaica, providing breakfast to primary-school students significantly increased their attendance and arithmetic scores. The programme was most effective for children who were wasted, stunted, or previously malnourished (Simeon and Grantham-McGregor, 1989). ● In Burkina Faso, a school feeding programme found that school canteens were associated with increased school enrolment, regular attendance, consistently lower repeater rates, lower drop-out rates, and higher success rates on national exams,

How does this issue affect education?	Examples of evidence that schools can effectively address this issue
<p>intelligence and hearing and may cause young women to give birth to cretinous children (PCD, 1999g)</p> <ul style="list-style-type: none"> ● Iron supplements help prevent iron deficiency anaemia and mild growth retardation as well as low-birth-weight babies of iron-deficient women (Levinger, 1994). 	<p>especially among girls (Moore, 1994).</p> <ul style="list-style-type: none"> ● In the Dominican Republic, up to 25% of children dropped out of school during a period without a school feeding programme. The effect was greatest in rural areas and for girls (King, 1990). ● In Spain, an interdisciplinary school nutrition project has been run successfully since 1988. It involves teachers, the school council, cook, social worker, school health team, and community nutritionist. It aims to promote healthy eating habits and to develop skills and self-empowerment. Interventions are conducted simultaneously in the classroom, a practical workshop, and the school lunchroom, together with addressing the families. Various participatory teaching methods are used in the classroom, integrated in different subjects and complemented by a food preparation workshop. A 1990 evaluation showed that students' knowledge and skills about food had increased; children were willing to try a greater variety of fruit, vegetables, and pulses; and there were positive changes in personal hygiene habits but poor results in dental hygiene practices. Three-fifths of the children cooked some of the suggested recipes at home. Among the lessons learned were: interdisciplinary work is important for school nutrition education and school meals should be part of the educational programme (Dixey et al., 1999).
<p>Lifestyle behaviours associated with STDs, HIV/AIDS, and the use of alcohol, tobacco and other drugs</p>	
<ul style="list-style-type: none"> ● As a result of HIV/AIDS, many young children, especially in sub-Saharan Africa, are orphaned or otherwise affected by the socio-economic consequences of the epidemic, especially in hard-hit communities. In many countries, 60% of all new infections occur among 15- to 24-year-olds who will probably develop AIDS eventually (WHO, 1998 draft). ● HIV, which can be transmitted from infected mothers to their offspring, can affect a child's nervous system, resulting in nonspecific developmental delays, including impaired brain growth and chronic impairment of cognitive performance. These conditions can lead to poor attention and concentration, cognitive slowing, or decreased speed of information processing (Sternberg et al., 1997). ● Early sexual relationships can have profound effects on adolescent health and development: unwanted and too early pregnancies and childbirth (which may keep teenage mothers away from school), dangerous abortions, and sexually transmitted diseases (which may affect their health and their ability to concentrate on their studies) (WHO, 1999 draft). ● Tobacco is a major killer and a known or probable cause of about 25 diseases (WHO, 1998c). In the developing world, it poses a major challenge not just to health but also to social and economic 	<ul style="list-style-type: none"> ● In the United States, a study of nearly 6,000 students from 56 schools implemented a Life Skills Training (LST) programme based on a person/environment interactive model which assumes that there are multiple pathways to tobacco, alcohol, and drug use. The results of the three-year intervention study showed that LST had a significant impact on reducing cigarette, marijuana, and alcohol use. Results of the six-year follow-up indicated that the effects of the programme lasted until the end of the twelfth grade (CDC, 1999). ● Australia, Chile, Norway, and Swaziland collaborated in a pilot study on the efficacy of the social influences approach in school-based alcohol education. The data converge on the finding that peer-led education appears to be efficacious in reducing alcohol use across a variety of settings and cultures (Perry and Grant, 1991). ● In South Africa, a smoking prevention programme, derived from Social Cognitive Theory, was implemented in schools in the Cape Town area. During the intervention, children increased their self-confidence and decreased the use of tobacco compared with those in the control schools. This evaluation led to a recommendation that the Department of Education and Training consider making the programme part of the formal school curriculum (Hunter et al., 1991). ● In Switzerland, 'addiction prevention days' at a secondary school in Basle initially had to overcome students' attitudes of not wanting a project about addiction, perceiving it as 'childish'. The six stages of the programme included individual and group activities, such as shopping with a budget of a certain amount; visiting a community sewage system, and a communal information office for adolescents in crises; making plaster masks; and preparing for a parents' evening at which the outcomes of the project were presented. The manager of the project was 'impressed how initial resistance developed into participation and even enthusiasm of the participants. . . . The experiences made during the various stages resulted in profound discussions. . . . Towards the end of the project, we thus managed to determine the roots and problematic nature of addictive behaviour' (Hefel and Vonder Muehl, 1998). ● In Denmark, in a class on drug abuse, activities included writing a play in their Danish class and then acting it out for a ninth-grade class, including a warm-up dance and question and discussion period. In connection with the project, the class also held two theme days. Pupil and teacher evaluations concluded that the project was generally successful 'in that it managed to bring a sensitive subject up for debate without pointing any fingers and by adding a humorous approach and at the same time by successfully making the pupils aware of the risks of drug and alcohol abuse' (Birkman, 1995). ● In the United States, multiethnic elementary schools received a package of interventions that included in-service training for teachers, developmentally appropriate parenting classes for parents, and developmentally adjusted social competence training for children. The evaluation showed that, compared with those in the control group, fewer of the students who

How does this issue affect education?	Examples of evidence that schools can effectively address this issue
<p>development and to environmental sustainability (Bellagio Statement . . . , 1995).</p> <ul style="list-style-type: none"> • The use of alcohol and other drugs poses a special threat to young people because of the short- and long-term consequences associated with such behaviour. For example, alcohol can lead to cognitive impairment, which can lead to unsafe driving, violence and injury in the short term and cardiovascular disorders, memory loss and Foetal Alcohol Syndrome in babies born to alcoholic mothers in the long term. Marijuana can lead to the inability to pay attention continuously or to digest complex information in the short term and to respiratory problems and a loss of energy and ambition in the long term (Girdano and Dusek, 1988). Alcohol/substance abuse is often associated with violent behaviours, suicide attempts, car crashes, and various injuries (Northeast CAPT, 1999). 	<p>received the full intervention reported violent delinquent acts, heavy drinking, sexual intercourse, multiple sex partners, or pregnancy or causing pregnancy by age 18. The students who received the intervention reported more commitment and attachment to school, better academic achievement, and less school misbehaviour than the control students (Hawkins et al., 1999).</p> <ul style="list-style-type: none"> • In Uganda, a health education programme in primary schools aimed at AIDS prevention, emphasizing improved access to information, improved peer interaction and improved the quality of performance of the existing school health education system. After two years of interventions, the percentage of students who stated they had been sexually active fell from 42.9% to 11.1%. Social interaction methods were found to be effective, because students in the intervention group tended to speak to peers and teachers more often about sexual matters. Reasons for abstaining from sex were associated with the rational decision-making model rather than with the punishment model (Shuey et al., 1999). • Kirby and DiClemente (1994) found that negotiation skills enhance students' ability to delay sex or to use condoms. Wilson and colleagues (1992) concluded that interactive teaching methods are 'better than lectures at increasing condom use and confidence in using condoms and at reducing the number of sexual partners'. Their evaluation found that the female student teachers in Zimbabwe who participated in a skills-based AIDS intervention were more knowledgeable about condoms and their correct use, had a higher sense of self-efficacy, perceived fewer barriers, and reported fewer sexual partners four months after the intervention than their colleagues who participated in a lecture. • Research has repeatedly shown that school-based efforts that provide information and services for sexual and reproductive health do not lead to earlier or increased sexual activity in young people. On the contrary, in some cases, sex education delayed the initiation of sexual intercourse (Grunseit and Kippax, 1993; Blaney, 1993; Kirby et al., 1994).

Table II: Illustrative roles that educators and their collaborators can play to address selected health issues

Condition or problem	Shaping and implementing policy directions	Advocating interventions and strategies	Partnering for effective service delivery	Delivering therapeutic interventions	Delivering educational interventions	Delivering environmental interventions	Tracking and monitoring
<i>Helminths</i>	Reporting data on infection rates to local authorities in order to create an awareness of this problem among responsible officials	Outreach to parents, education sector officials, and others to demonstrate the educational consequences of infection	Forging alliances with local health personnel and NGOs to secure treatments; working with community members to undertake effective treatment and prevention campaigns	On-site deworming	Participatory health education on such topics as clean water, environmental sanitation, handwashing, sanitary food preparation and handling, the use of shoes	Latrine construction; creation of potable water source	Maintaining health cards for students that indicate date of last treatment; keeping records that permit the monitoring of treatment efficacy
<i>Unsafe water and inadequate sanitation</i>	Testing of low-cost technologies for providing water and sanitation; demonstrating promising technologies to encourage further investment	Outreach to health and education sector officials to help them understand the educational and health consequences of poor sanitation; communication to relate female enrolment to clean water and waste facilities	Mobilizing communities to contribute labour and other resources for school facilities improvement	On-site deworming	Participatory health education on such topics as the maintenance of water systems and latrines; the disease cycle; the use of waste products to improve food production	Latrine construction; creation of potable water source; modelling use of ladle	Monitoring per capita water consumption
<i>Micronutrient deficiencies and related disorders</i>	Experimentation with alternative approaches (health education, nutrition, supplementation) for addressing micronutrient deficiency disorders	Outreach to parents, education sector officials, and others to demonstrate the educational consequences of micronutrient deficiencies, particularly vitamin A, iodine, and iron	Working with NGOs, co-operatives, and agricultural extension services to help members gain access to low-cost sources of critical micronutrients	On-site micronutrient supplementation through tablets or school feeding activity	Participatory health education on such topics as adequate diet; local and affordable sources of key micronutrients; school gardening	The use of latrines and low-cost systems to deliver potable water to help break infection-transmission cycles that contribute to a high incidence of micronutrient deficiency disorders	Maintenance of basic records to ensure that children are treated at appropriate intervals; maintenance of accurate attendance records to track the impact of intervention on children's morbidity rates

Table III: Selected on-line resources for school health

Agency	Website
American School Health Association	http://www.ashaweb.org/
Australian Health-Promoting Schools Association	http://www.hlth.qut.edu.au/ph/ahpsa/
Canadian International Development Agency	http://www.acdi-cida.gc.ca/index.htm
CARE	http://www.care.org/
Child-to-Child Trust	http://www.child-to-child.org
Education Development Center, Health and Human Development Programs	http://www.edc.org/HHD/
Education for All	http://www2.unesco.org/efa/
Education International	http://www.ei-ie.org/
UN Food and Agriculture Organization	http://www.fao.org
International Committee of the Red Cross	http://www.icrc.org
International Water and Sanitation Centre	http://www.irc.nl/
Pan American Health Organization: Health- Promoting Schools in the Americas	http://www.paho.org/english/hpp/hs_home.htm
Partnership for Child Development	http://www.ceid.ox.ac.uk/child/
Resources for School Health Educators	http://www.indiana.edu/~aphs/hlthk-12.html#school
Save the Children (US)	http://www.savethechildren.org
Save the Children (UK)	http://www.oneworld.org/scf
Joint United Nations Programme on HIV/AIDS	http://www.unaids.org
United Nations Development Programme	http://www.undp.org
United Nations Educational, Scientific and Cultural Organization	http://www.unesco.org
United Nations Population Fund	http://www.unfpa.org
United Nations Children's Fund	http://www.unicef.org
United States Agency for International Development	http://www.info.usaid.gov/
United States Centers for Disease Control and Prevention, Division of Adolescent and School Health	http://www.cdc.gov/nccdphp/dash/index.htm
World Food Programme	http://www.wfp.org
World Health Organization, Department of Health Promotion, Global School Health Initiative	http://www.who.int/hpr/
World Health Organization, Regional Office for Europe, European Network for Health-Promoting Schools	http://www.who.dk/enhps/index.html
World Health Organization, Regional Office for the Western Pacific	http://www.wpro.who.int/
World Bank (Resources for Schools)	http://www.worldbank.org/html/schools/

The above websites are current as of May 2000. Some of them work properly only in the Internet Explorer or Netscape Navigator browsers. Website addresses are subject to change.

Table IV: Highlights of major regional trends and activities, barriers, and future actions for school health and nutrition

Region	Major trends and activities	Barriers	Future actions
Africa	<p>Africa faces significant challenges in health and education. According to a World Bank report, '[N]owhere else in the world are birth rates so high, maternal and child deaths so widespread, use of family planning less developed . . . and HIV and other sexually transmitted infections so endemic. Infectious and parasitic diseases . . . are on the rise and continue to severely affect poverty-stricken areas. Two-thirds of the world's HIV/AIDS epidemic is in Africa'. Sixteen African countries still enrol less than half of their children in primary school, and enrolment rates are dropping (World Bank, n.d.). In most African countries, the enrolment of girls lags significantly behind that of boys. In addition, malnutrition exacerbates the detrimental effects of hunger on learning (Del Rosso and Marek, 1996).</p> <p>The Partnership for Child Development has developed a protocol for a comprehensive situation analysis of school-based nutrition and health interventions, which has been tested in several African countries (Del Rosso and Marek, 1996).</p> <p>Regional school health initiatives began in 1996 after the WHO Experts Committee on Comprehensive School Health Promotion recommendations were made. Regional efforts have assisted some states to develop and distribute school health promotion materials. Some states have developed national school health guidelines and designed long-term plans and strategies for the implementation of school health initiatives (WHO/AFRO, 1999).</p> <p>WHO's major regional events aimed at strengthening the exchange of information, experience, and expertise, including:</p> <ul style="list-style-type: none"> ● the development and distribution of guidelines on Health-Promoting Schools (HPS); ● the appointment of national school health focal points; ● the formation of anglophone, francophone or lusophone HPS networks; ● designing long-term plans and strategies for HPS initiatives throughout the region; ● the use of communication media to meet basic learning needs (WHO/AFRO, 1999). <p>WHO/AFRO reports some of the positive trends:</p> <ul style="list-style-type: none"> ● Throughout the region, school health services have increased. Improvement has been evident in expanded programmes for immunization and basic health services. ● School feeding programmes are now common in a number of African countries and include one meal each school day. ● The provision of potable water and sanitary facilities was improved. ● School/community garden and brick-moulding projects are common in many countries of the region (WHO/AFRO, 1999). <p>A UNICEF representative reports:</p> <ul style="list-style-type: none"> ● Because of the HIV/AIDS scourge, especially in sub-Saharan Africa states, UN agencies, NGOs, and other concerned partners have joined in concerted efforts to implement school health programmes with an emphasis on changing behaviour. 	<p>WHO/AFRO identified the following barriers:</p> <ul style="list-style-type: none"> ● lack of national school health policies; ● lack of material and financial resources; ● shortage of supplies, including books, furniture, equipment; ● lack of essential infrastructures; ● lack of teachers trained in health issues; ● bureaucracy, red tape, and administrative inefficiencies; ● serious congestion of pupils in most schools; ● high percentage of children and adolescents in the populations (WHO/AFRO, 1999). <p>A UNICEF representative reports:</p> <ul style="list-style-type: none"> ● difficulty in obtaining relevant school health literature; ● lack of relevant disaggregated data, particularly at the community level; ● no focal point, no institution leading the region, no open network at present; ● many schools are examples of unhealthy living (e.g. tolerance of dirt and unhealthy habits in schools), yet teach a health curriculum. 	<p>WHO/AFRO plans:</p> <ul style="list-style-type: none"> ● development of national school health guidelines and policies; ● constitution of AFRO HPS Network; ● mobilization of resources at local and national levels to reinforce school health initiatives; ● strengthening intersectorial collaboration in favour of school health programmes; ● increasing parent, teacher, pupil, and community participation in school health initiatives; ● assisting states to recognize the schools as a critical setting for health education and promotion (WHO/AFRO, 1999). <p>The World Bank's new School-Based Health and Nutrition Initiative for Africa has as its primary goal to improve iron status to reduce lethargy and otherwise to improve learning (Berg, 1999).</p> <p>A UNICEF representative mentioned in 1999:</p> <p>'Every head must become a school health manager and every teacher must be the class health manager.' Every class should have plans for the day, the week, the term.</p>

Region	Major trends and activities	Barriers	Future actions
	<ul style="list-style-type: none"> Some school health programmes have targeted learners' health behaviour and the modification of health behaviour in learners' homes and in the community as a result of the interventions for schoolchildren in the community. Few programmes seem to target health behaviour in learners while they attend school. School health education and life skills education are the 'fastest moving' programmes in the region and likely to overtake more traditional health programmes, partly due to significant UNICEF attention and deliberate targeting across the region. However, the education sector has to keep on proving and demonstrating that they are relevant; e.g. that a life skills programme can reduce HIV/AIDS risk behaviour. Zimbabwe's Life Skills programme, supported by UNICEF, is an 'inspiration' in the region. It uses two eloquent videos and textbooks that show evidence of 'incredible work' (A. Obura, personal communication, 1999). <p>'Although no research has been conducted on life skills education in Africa, the HIV/AIDS pandemic has led Uganda and Zimbabwe to put life skills training into their school programs' (Del Rosso and Marek, 1996, p. 30).</p> <p>The School Health Education Project, launched in Uganda in 1987, is one of the most coherently planned and comprehensive national school health initiatives in developing countries. It was initiated by the government of Uganda with support from UNICEF and the involvement of the Child-to-Child Programme. Health education was integrated into the basic science curriculum along with a parallel programme to develop a network of health educators at the district level to support community and school health activities. Teaching materials include resources on AIDS, water and sanitation, diarrhoeal diseases and immunization. Health education was made possible to examine and became part of the primary students' examination (Hubley, 1998).</p> <p>The child-to-child approach, an educational method that originated in Africa, has been tried in almost all African countries. It does not depend on the didactic relation between teacher and student, but rather involves children in reaching siblings, parents and communities. Some programmes have been credited with raising vaccination rates, improving children's hygiene, and leading to an increased knowledge of anaemia and significant changes in dietary practices (Del Rosso and Marek, 1996).</p> <p>The child-to-child approach in Zambia has proved to be effective in delivering health education to some, but not all, children in primary schools. A successful, innovative classroom at Kabale School in Mpika was characterized by: the majority of teachers involved in moving towards a child-to-child school; schoolwide initiatives to have clean drinking water in each class and water for handwashing; the twinning of pupils, including older with younger, able with less able, normal with mentally disadvantaged; children taking responsibility for their own learning and for that of their group (Gibbs, 1997).</p> <p>Africa has a major advantage in the wealth of its community organizations, such as parent-teacher associations. These associations can be a channel for community participation and responsibility (Del Rosso and Marek, 1996). 'In a recent primary education project in Nigeria, for example, communities were asked to evaluate their schools, to cite their expectations of improved outcomes and to indicate how they, as parents, teachers and education administrators could help make those improvements' (World Bank, n.d.).</p>	<ul style="list-style-type: none"> Some donors do not provide basic essentials (e.g. latrines), others do not encourage community participation. Programs are often sporadic and rarely sustained. They should include income-generating activities and make the gathered information and learning available to local educators. Broad gender dimensions need to be addressed so that health education becomes less stereotypical and focuses less on the 'feminine' roles but also attracts 'the movers and shakers of the world'. Currently, women remain solely responsible for the health of the children and the home (A. Obura, personal communication, 1999). The education system needs to adapt to the impact of HIV/AIDS by altering the content – knowledge, skills, values – of what it teaches and the methods it uses (L. Cole, personal communication, 1999). 	<p>Targets should be concrete, attainable and susceptible to monitoring. (A. Obura, personal communication, 1999).</p> <p>Increased NGO involvement and dedicated, visionary leaders, focusing on facilitating action at the community level (A. Obura, personal communication, 1999).</p>
Americas	<p>North America</p> <p>In the United States, from the start of the 1970s, the Centers for Disease Control and Prevention (CDC) have been the federal focal point for technical assistance related to health education in the schools. The US Congress asked CDC to provide support for the development of comprehensive health education programmes in schools (PAHO, 1999).</p>	<p>North America</p> <p>Barriers to collaboration in the United States for improving health through schools include:</p>	<p>North America</p> <p>The book <i>Health Is Academic</i> identifies, as a promise for the future, co-ordinated school health programmes becoming an</p>

Region	Major trends and activities	Barriers	Future actions
	<p>Until the 1990s, little was known about the prevalence of behaviours practised by young people that put their health at risk. The Youth Risk Behavior Surveillance System (YRBSS) now provides such information. In 1994, CDC also started the School Health Policies and Programs Study (SHPPS), to monitor policies and to provide information on five components of school health programmes. Data are compiled and converted into specific guidelines to improve the effectiveness of school health programmes (CDC, 1999; PAHO, 1999).</p> <p>CDC has established a national framework to support co-ordinated health education programmes. More than 30 professional and volunteer organizations work with CDC to develop model policies, guidelines, and training to assist states in implementing high-quality school health education (CDC, 1999).</p> <p>CDC collaborates with scientists and education experts to identify curricula that have successfully reduced health risk behaviours among young people (programmes that work). CDC provides resources to ensure that these curricula, including training for teachers, be made available nationwide (CDC, 1999).</p> <p>During the 1990s, the first national standards in health education were developed and published, spearheaded by the American Cancer Society, the American School Health Association and the American Association for Health Education. One of the major nationwide activities in school health promotion in the US during the past decade was the Safe and Drug-Free Schools programme, in which the US Department of Education played a leading role. In the mid-1990s, the Healthy School Meals Initiative, started by the US Department of Agriculture, established strong standards to get school nutrition programmes to comply with the recommendations of the US Dietary Guidelines. The nutrition initiative supported nutrition education programmes in schools (H. Wechsler, personal e-mail, 2000).</p> <p>In 1998 the book <i>Health Is Academic: A Guide to Coordinated School Health Programs</i> was published. It describes the importance of incorporating students' health into school programmes and policies as a prerequisite for learning and discusses how the eight components of a co-ordinated school health programme can work together to support students and help them to acquire the knowledge and skills to become healthy, productive adults. This book was developed by CDC with support from CDC and in collaboration with more than 70 national organizations (PAHO, 1999).</p> <p>In Canada, the province of British Columbia has introduced the revolutionary 'Healthy Schools' initiative, which involves students in learning and practising habits that allow them to make responsible health decisions. The programme teaches students to work co-operatively to find solutions to the health subjects that concern them. For example, the goal of balanced food consumption is reached through school lunch programmes, nutrition education, the exhibition of positive nutritional values of food, cultural approaches to food preparation, the distribution and management of wastes and community gardens (PAHO, 1999).</p>	<ul style="list-style-type: none"> ● lack of awareness; ● lack of specific data; ● limited resources (time, personnel, funding); ● competing priorities; ● insufficient staff training; ● staff turnover; ● unclear lines of communication and/or organizational structure; ● fear of change; ● lack of supportive policies; ● fear of losing resources (Marx, 1998). 	<p>essential part of every curriculum to help children maximize their academic achievement and positive health outcomes.</p> <p>CDC is in the process of launching a national initiative to allow schools to prevent cardiovascular disease, cancer, and diabetes through programmes designed to promote physical activity and healthy eating and to prevent tobacco use (H. Wechsler, personal e-mail, 2000).</p>

Region	Major trends and activities	Barriers	Future actions
	<p>Latin America and the Caribbean</p> <p>In 1988, the Caribbean Food and Nutrition Institute initiated a school-based Community Nutrition Education Program, Project Lifestyle, which is still being implemented in various Caribbean countries. The project focuses on the adoption of healthy lifestyle behaviours among primary-school children (PAHO, 1999; Bocage, 1999).</p> <p>The Health-Promoting School initiative originated in a meeting on comprehensive school health education in Costa Rica in 1993. While earlier school health efforts in Latin America focused on health education only, the new initiative also included environmental health and health and nutrition services at school. The Network for the Development of Health-Promoting Schools was launched in 1995 (M. T. Cerqueira, personal communication, 1999).</p> <p>Early in the decade, Bolivia and Costa Rica undertook a 'rapid diagnosis and analysis' to evaluate fully their countries' institutional capacities to undertake health promotion and health education at the primary-school level (M. T. Cerqueira, personal communication, 1999).</p> <p>During the decade, countries started to adapt the Youth Risk Behavior Survey as causes of death had shifted from infectious diseases to lifestyle-related illnesses (Cerqueira, 1999). The view of health education has changed accordingly, from preventive education only, to 'healthy life styles' education (A. Rojas, personal communication, 1999).</p> <p>At the end of the 1990s, sex education and HIV/AIDS prevention education were being included in some countries, and drug prevention education was included in almost all countries. School health education programmes are being designed on the basis of interactive educational methods. Recently, the UNESCO Regional Office in Chile has developed computer-simulation games to train teachers and school directors in preventive education (A. Rojas, personal communication, 1999).</p> <p>Preliminary results of a 1999 situational analysis of existing school health and nutrition needs and strategies in Latin American countries show that new health and education scenarios are increasing the opportunities for collaboration (e.g. El Salvador has a successful multisector strategy for health and education with a powerful strategic alliance that includes sectors such as social protection, water and sanitation, international agencies, and private sponsors), and school health programmes facilitate community alliances (S. Meresman, personal communication, 1999).</p>	<p>Latin America and Caribbean</p> <p>A UNESCO representative from Latin America reported:</p> <ul style="list-style-type: none"> ● an initial lack of political concern; ● secondly, some health education issues such as sex education or HIV/AIDS prevention were controversial, especially to the Roman Catholic Church; ● in addition, there was a lack of funds (A. Rojas, personal communication, 1999). <p>There is a lack of know-how (e.g. for needs assessment, implementation, evaluation), materials, and training (M. T. Cerqueira, personal communication, 1999).</p>	<p>Latin America and Caribbean</p> <p>A 1999 situational analysis of existing school health and nutrition needs and strategies in LAC initially identified the following needs:</p> <ul style="list-style-type: none"> ● a need to restructure policy to include priority-setting, improved co-ordination, focusing resources, monitoring, and evaluation; ● a need to strengthen skills-based education and improve conditions for healthier practices; ● a need for increased support and resources for school health projects, teacher development, and life-skills-oriented health education and promotion (S. Meresman, personal communication, 1999). <p>PAHO's Goals for 2010 include:</p> <ul style="list-style-type: none"> ● teacher training will be in place; ● health sector people will receive training in education; ● YRBS will be in place and yield more data (M. T. Cerqueira, personal communication, 1999). <p>In the Bahamas, the Healthy Schools Program requires that easy access to services be provided, as well as the replacement of equipment and the restoration of facilities (PAHO, 1999).</p>
<p>Europe</p>	<p>Western Europe</p> <p>In 1991, an alliance was created between the European Commission, the WHO Regional Office for Europe, and the Council of Europe to establish a European Network of Health-Promoting Schools. The goal was to create an international consensus on the concept of a Health-Promoting School (a school that 'builds a living and working environment that creates and strengthens health'). The network has rapidly expanded from a small pilot activity involving 4 countries in 1991 to more than 500 pilot schools with 400,000 students in 38 countries, including all 15 members of the European Union.</p> <p>The ENHPS helped to shift school health efforts from a focus on curriculum and single causes of ill health to an integration of health promotion into all aspects of the school setting.</p>	<p>Western Europe</p> <p>Health-Promoting Schools still only comprise 2% to 5% of schools in Europe.</p> <p>There has not been an extensive evaluation of the Network's impact. Evaluation was not put into place at an early stage.</p>	<p>Western Europe</p> <p>Strategies must increase partnerships and participation with the education sector.</p> <p>Increase the political will to move things forward to ensure that the people and financial resources are available to countries.</p>

Region	Major trends and activities	Barriers	Future actions
	<p>Representatives of 43 countries, from various sectors and professions, attended the First Conference of the European Network of Health-Promoting Schools in May 1997.</p> <p>A strong partnership among the EC, WHO, and the Council of Europe (made a formal entity through an International Planning Committee) has given political attention, financial backing, and a positive reputation to the ENHPS.</p> <p>While co-operation at the European level is strong, implementation at the country and school level is varied and innovative. The ENHPS provides a flexible framework within which countries and schools can determine their needs and work towards them in their own ways.</p> <p>More countries and schools realize the connection between good health and education; in many parts of Europe, health has become part of school life. A databank of Health-Promoting School projects throughout Europe has been established and is available on the Web.</p> <p>The Health Behaviour in School-aged Children Study, a WHO collaborative cross-national study begun in 1982, continued throughout the 1990s with 24 countries participating. The findings are used to develop health promotion policy and programmes across Europe.</p> <p>In 1999, the European Network of Health-Promoting Schools developed guidelines for school health and nutrition: <i>Healthy Eating for Young People in Europe: A School-based Nutrition Education Guide</i>.</p>	<p>The link between the health and education sectors was not strongly established from the outset. There is still a need to place health on the education agenda and for the two sectors to work together.</p>	<p>Provide tools and services for countries and schools to conduct evaluations and achieve the results that they wish to see. Approaches to measure impact, quality, and effectiveness must be developed.</p> <p>More must be done to tackle the underlying issues of self-esteem, critical thinking, and action competence.</p> <p>Continue to push towards more structural changes within the school setting.</p> <p>Reduce inequalities in health and education.</p>
	<p>Central and Eastern Europe</p> <p>Many of the formal mechanisms providing social services to the population in the communist era have fallen away without any replacement. Support for maintaining one's health and nutritional status through the education system was an important feature of the social function of schools in the communist period.</p> <p>The transition to the free market saw drastic falls in the provision of textbooks, school supplies and basic facilities (such as heating, running water, and functioning toilets), and school health initiatives such as school meals, health checks, and physical education. Recreational and leisure activities, once organized by teachers or communist youth organizations, have almost disappeared, and there are few centres or clubs where young people can engage in activities. Recreational and after-school activities, previously the responsibility of education ministries, are increasingly organized by the private sector.</p> <p>At the same time, there are burgeoning health problems among young people, including HIV/AIDS rates, STIs, and IV drug use. The use of alcohol and tobacco and glue sniffing are also increasing. A number of key international and bilateral agencies are working together to rebuild the social support mechanisms that have fallen away. There is consensus among the agencies and an emerging strategy to address the psychosocial needs of young people in the region.</p> <p>There are numerous models of excellence within countries, such as the establishment of health promotion centres to reduce the medical and curative emphasis of previous health services. 'One small but groundbreaking initiative reported by the National Centre for Health Promotion was in eastern Slovakia, where life skills and practical home economics are being provided to Roma youth. Teacher, pupil and community satisfaction was expressed with this short-term summer programme of classes making use of active learning methods by motivated and prepared teachers. Activities included personal budgeting, healthy nutrition and childcare' (Kenny et al., personal communication, 1999). However, these examples are not the norm and have not typically been taken to scale.</p>	<p>Central and Eastern Europe</p> <p>There is not only a lack of resources but an uneven distribution of the existing resources. Access to education is not equitable for all children. Financial and political problems have also resulted in many teachers working without pay.</p> <p>Since the transition, there have been overall declines in kindergarten enrolment, particularly in the former Soviet Union and south-eastern Europe, and enrolment rates in primary schools have also dropped. The closing of pre-schools has limited immunization and medical care to children. More children are working to supplement family income, either while attending school or dropping out to do so, and more are engaging in truancy and juvenile criminality. Minority ethnic groups and the disabled are particularly affected.</p>	<p>Central and Eastern Europe</p> <p>Teaching methods must encourage participation and individual development. Life skills education must be provided, both formally and informally, to reach those falling through the safety nets.</p> <ul style="list-style-type: none"> ● Reduce disparities in access and achievement. Increase educational opportunities and quality for less-advantaged children. ● Restimulation of extracurricular support by schools. ● Investigation of child labour and its links to school attendance and learning. ● Integration of disabled children into normal schools. ● Attention to the needs of ethnic minorities. ● Encouragement of early childhood development. ● Adequate financial transfers to local governments with weak resource bases (UNICEF, 1998a).

Region	Major trends and activities	Barriers	Future actions
<p>Middle East and North Africa</p>	<p>Following a situational analysis of the state of school health education in the region, WHO, UNICEF, UNESCO, and the Islamic Educational Scientific and Cultural Organization (ISESCO) joined forces in 1985 to develop, promote, finance, and implement the Action-oriented School Health Curriculum. A workshop in 1986 led to the development of national guidelines and a prototypical curriculum and teachers' guide with teachers' resource books. The curriculum emphasizes activity-based learning and was designed to involve the family and community in health-related activities. Bahrain, Egypt, Jordan, Morocco, and the Sudan are in their fourth year of a pilot programme to try the new curriculum.</p> <p>While a rigorous, comprehensive evaluation of the programme has not been conducted, a meeting of project co-ordinators in 1996 indicated limited progress to date. This, plus growing concerns over the quality and relevance of education, caused UNICEF to rethink its approach to school health and introduce the Global Education Initiative – now part of ongoing basic education reform processes in 7 countries.</p> <p>During a UNESCO conference of education ministers in 1994, participants expressed concern over the decline in the quality of education in the region, evident from increased repetition and drop-out rates.</p> <p>The region is becoming younger. Within five years, approximately 60% of the population will be under 25 years of age.</p> <p>The 1970s, 1980s, and early 1990s saw an unprecedented increase in basic education enrolment.</p> <p>School health education is included in the national budgets of most countries in the region.</p>	<p>Poor management of public- and private-sector education institutions and systems.</p> <p>International school health initiatives did not incorporate the larger educational goals and processes of schools. Health professionals lacked educational expertise.</p> <p>Different school health initiatives are sometimes being conducted in parallel in the same countries, co-ordinated and funded by separate agencies with separate funding.</p> <p>Increasing numbers of young people are unemployed and out of school, including nomadic groups, the disabled, rurally isolated children, and those marginalized in urban areas, refugees, and war-displaced. Growing numbers of young people are affected by smoking, HIV/AIDS, and a wide range of drugs (with young people contributing to the demand and the supply).</p>	<p>Provide educational training to health professionals and include education experts in school health efforts and strategies.</p> <p>Explore ways to merge the different school health concepts and initiatives occurring in parallel in the same countries. Perhaps the notion of a 'child-friendly school' can unify the health and education goals of schools and agencies.</p> <p>Countries and agencies must recognize and address the growing problems of the region's adolescents. Similarly, early childhood care and development, including health, nutrition, and stimulation, need to be part of an integrated educational approach.</p> <p>Reformation of formal and academic learning environments into more flexible processes able to meet the Arab world's need for technically skilled and globally informed human resources (UNICEF, n.d.).</p>
<p>Asia and Western Pacific</p>	<p>In 1994, the first regional WHO workshop on school health promotion identified the key areas for intervention as school health education, school health services, and school health environment. Regional guidelines were established in 1996 to provide a framework and a reference point to develop healthy lifestyles in the school setting in a comprehensive way (WHO/WPRO, 1999). Collaboration in the development of Health-Promoting Schools with organizations such as UNESCO, UNICEF, UNFPA, South Pacific Commission, and Education International has been initiated (Erben, 1997).</p> <p>Since then, Health-Promoting Schools have been started in nearly all countries in the region, linked into Healthy Cities in China, Malaysia, Viet Nam, the Lao People's Democratic Republic and Mongolia and as a central feature of Healthy Islands initiatives in the Pacific. Projects to improve the physical infrastructure have been undertaken to improve the water and sanitation in schools. Schools have provided the entry points for such issues as helminth reduction, leprosy education, and smoking control (WHO/WPRO, 1999).</p> <p>While Health-Promoting Schools remain at the pilot phase in some countries (such as China, Viet Nam, and Mongolia), they are moving towards a national policy framework in other countries, especially in the Pacific.</p>	<p>WHO/WPRO reports:</p> <p>Progress has been hindered by a lack of understanding within governments about the need for intersectoral involvement, community involvement, and new partners to help create Health-Promoting Schools (WHO/WPRO, 1999).</p>	<p>Summary of the WHO meeting 'Networking for Health-Promoting Schools' in Beijing, December 1997, includes:</p> <ul style="list-style-type: none"> ● Ministries of health and education in the northern part of the region should be invited to nominate a representative to serve as a standing member on the Regional Network and create national networks and a national plan for the development of HPS. ● Networking should continually

Region	Major trends and activities	Barriers	Future actions
	<p>About 80% of the Pacific countries have started at least one Health-Promoting Schools project. In some countries (e.g. Singapore, the Marshall Islands), the concept of healthy schools has been integrated into an existing school health programme rather than started as a separate initiative (WHO/WPRO, 1999).</p> <p>At the country level, collaboration between the health and education authorities has been critical. In a number of countries (such as Micronesia, Vanuatu, Kiribati, Singapore, and Malaysia), national co-ordinators have been appointed in the Ministry/Department of Education, with a counterpart in the Ministry/Department of Health. National Co-ordinating Committees are also being developed in a number of countries, including Papua New Guinea, Samoa, Cambodia, and the Lao People's Democratic Republic (Lin, 1999).</p> <p>UNESCO is organizing regional training workshops on preventive education, e.g. against HIV/AIDS, with a focus on the professional development of teachers and health education providers, curriculum development, and the development of teaching/learning materials (L. Gregorio, personal communication, 1999).</p> <p>Country-specific examples include:</p> <p>China</p> <ul style="list-style-type: none"> ● National Conference on School Health Promotion, Beijing, December 1995, with participants from Education and Health sectors from all provinces. ● WHO <i>Regional Guidelines on the Development of Health-promoting Schools – A Framework for Action</i>, translated into Chinese. Commitment made to adapt these guidelines in the provinces. ● National Health Education Institute established Health-Promoting Schools in Chifeng (Inner Mongolia), Wuhan, and Beijing's west city in December 1995. Mid-term evaluation meeting in October 1996 indicated the success of the projects. ● Using deworming as an entry point to Health-Promoting Schools, the county of Lianjiang, China, launched a comprehensive school-based approach (Xu et al., 2000). ● Individual provinces and cities are starting to identify health issues as entry points for the development of Health-Promoting Schools (WHO/WPRO, 1999). <p>Indonesia</p> <ul style="list-style-type: none"> ● School milk programme and a programme that uses schoolchildren to reach parents to encourage the use of health services were implemented. ● UNICEF assisted the Centre for Physical Fitness and Recreation (MOEC) in producing textbooks on health in primary schools with a relevant Teacher Guide. Currently, UNICEF is assisting MOEC to develop a guidebook and module on life skills education (Jiyono, personal communication, 1999). ● The Indonesia Partnership for Child Development implemented a school health programme that provided mass treatment with anthelmintics and a child-to-child approach to health education. A school health insurance system is being developed to sustain the programme (PCD, 1999e). <p>Philippines</p> <ul style="list-style-type: none"> ● In the Department of Education, Culture and Sports (DECS), the Health and Nutrition Centre (HNC) has the mandate to develop and manage an Integrated School Health and Nutrition Program (SHNP). It is directed to all schools at all levels, reaching out to the homes and communities to institutionalize the Teacher-Child-Parent Approach. ● School health activities in 1996 included a search for the most outstanding school, implementing (a) the 	<p>The key issues that impinge on the effective implementation of healthy settings appear to include:</p> <ul style="list-style-type: none"> ● limited resources; ● lack of ownership; ● over-reliance on a small number of people; ● lack of action orientation or insufficient results achieved; ● insufficient management capabilities among public health professionals; ● insufficient engagement with other health programmes and with other sectors. <p>The above list suggests that strategic timing and engagement of appropriate people is a primary issue (Lin, 1999).</p> <p>UNESCO also reports low levels of community support and participation as a major shortcoming. It is trying to overcome this by setting up Community Learning Centres to build the capacities of the communities and to encourage community ownership, which will provide continuity and sustainability of the programmes (L. Gregorio, personal communication, 1999).</p> <p>Country-specific examples include:</p> <p>Maldives</p> <ul style="list-style-type: none"> ● Scarcity of trained people to implement health programmes in schools. ● Inadequate supply and production of teaching and learning materials for health. ● Inadequate co-ordination 	<p>seek collaboration in facilitating the Regional Network.</p> <ul style="list-style-type: none"> ● Findings from the helminth control project as an entry point for Health-Promoting Schools should be printed and distributed. ● The Regional Network could strengthen the Global School Health Initiative by providing case studies and reports. ● The Global School Health Initiative, in collaboration with the Regional Network, should consider convening a global conference to facilitate linkages across regions for the development of HPS. <p>UNESCO plans the following actions:</p> <ul style="list-style-type: none"> ● Sustained government support for activities related to health education, not only from MOEs and MOHs, but also from other relevant ministries, including supporting mobilization by finance ministries. ● More sharing of information on health education by providers through the electronic media. ● More co-ordinated activities of UN agencies and donors. ● Linking school health programmes with informal and nonformal infrastructures. ● Building capacity through continuing education and lifelong learning. <p>This will require commitment by all supporters of the programme, including policy-makers, users, and implementers (NGOs and IGOs),</p>

Region	Major trends and activities	Barriers	Future actions
	<p>'Clean and Green' school and community programme; (b) the national drug education programme; and (c) the intensification of the nationwide implementation of the DECS's 'War on Waste' and the School-inside-a-Garden programmes.</p> <ul style="list-style-type: none"> ● DOH and DECS launched a Healthy School Initiative in July 1995, involving senior government, municipal, and NGO representatives, at an elementary school in Bulacan. MOH and municipal staff are providing technical assistance. ● The Second National Health and Nutrition Congress for school health and nutrition personnel was conducted in October 1996 (WHO/WPRO, 1999). <p>Viet Nam</p> <ul style="list-style-type: none"> ● Viet Nam Health Insurance implemented a programme that uses school health insurance as a vehicle for Health-Promoting Schools. It showed that such insurance can be an effective system, not only to cover costs for the primary health care and hospital care required by schoolchildren, but also for prevention and health promotion activities. ● The Partnership for Child Development (PCD) introduced health education alongside a deworming programme in primary schools in Ha Nam. Stage one focused on health education lessons in schools. Stage two focuses on extracurricular activities, health education out of school, and the impact of health education in the family. The emphasis is on integrating health education into the children's everyday lives. <p>Australia</p> <ul style="list-style-type: none"> ● The first Sydney workshop on school health promotion was organized in December 1994. ● Several states have instituted Health-Promoting Schools initiatives. ● Ministers of Health and Education launched the publication <i>Towards a Health-Promoting School</i> in August 1996 (WHO/WPRO website). ● Twinning between schools has started as an initiative of the Australian Association of Health-Promoting Schools. Twinning puts a new Health-Promoting School in touch with a more experienced 'mentor' school, both nationally and internationally. One 'tripling' project includes a school in the Philippines and one in Kiribati (Erben, 1997). 	<p>between the health and education sectors and other concerned departments.</p> <ul style="list-style-type: none"> ● Lack of funds to train health personnel. ● Rapid turnover of health and education personnel and difficulty in coping with the fast-growing school populations. <p>Nepal</p> <p>Lack of research and infrastructure in the school health programme and lack of well-defined national strategies for the promotion, support, co-ordination, and management of school health programmes.</p> <p>Bhutan</p> <p>Limited national resources in terms of skilled labour and communication materials. Inadequate academic period allocated to health in the school timetable.</p> <p>Sri Lanka</p> <p>Lack of awareness of the importance of health education among decision-makers at regional levels and lack of monitoring, follow-up, and evaluation of current programmes (WHO, 1996b).</p> <p>Australia</p> <p>Extent to which education and health sectors are willing to fund strategies to integrate systems and networks (WHO/WPRO website).</p>	<p>and all levels from policy to grass roots (L. Gregorio, personal communication, 1999).</p> <p>Country-specific examples:</p> <p>Cambodia plans to revitalize its School Health Task Force; develop comprehensive national policies with clear roles and responsibilities; bring together and co-ordinate school-based initiatives from different MOH programmes such as deworming, immunization, micronutrient supplementation; and strengthen linkages between schools, health centres, and communities (A. L. D'Emilio, personal communication, 1999).</p> <p>Australia's central government is working on a document about Health-Promoting Schools to be considered by the National Health and Medical Research Council.</p> <p>The Australian Association of Health-Promoting Schools continues with a 'twinning project' to put new HPS in touch with more experienced 'mentor' schools, both nationally and internationally (WHO WPRO website).</p>

Table V: Selected International Conferences addressing school health and nutrition

Conference	Contribution to school health and nutrition
United Nations: UN World Summit for Children, 29–30 September 1990, New York, United States	The <i>World Declaration on the Survival, Protection, and Development of Children</i> includes: <ul style="list-style-type: none"> ● Enhancement of children's health and nutrition – a first duty. ● Commitment to work for a solid effort of national and international action to enhance children's health. ● Commitment to work for optimal growth and development in childhood through measures to eradicate hunger and malnutrition.
Rome: FAO/WHO International Conference on Nutrition, 5–11 December 1992, Rome, Italy	The conference document <i>Nutrition and Development – A Global Assessment</i> reports: <ul style="list-style-type: none"> ● Consequences of poor nutrition include a significant impact on child growth and development, learning capacity, work performance, and overall quality of life (p. 25). ● Nutrition education's goal is behaviour modification with strategies from social learning, social marketing, and entertainment-education strategies (p. 86). ● School health initiatives can also have positive effects on adult family members (p. 87). ● Nutrition education should be part of a comprehensive school health education programme that includes relevant curricula, preparation of teachers, pertinent educational materials, modification of the school environment, and co-operation among school, parents, and the community (p. 87).
New Delhi: World's First Education Summit (sponsored by UNESCO, UNICEF, UNFPA), 16 December 1993, New Delhi, India ('Pre-Summit', 13–15 December)	<ul style="list-style-type: none"> ● The summit provided an opportunity to mobilize high-level political support and financial and technical resources for primary education. ● It gave birth to the E-9 Initiative (summit participants: Bangladesh, Brazil, China, Egypt, India, Indonesia, Nigeria, Pakistan, plus Mexico), committed to 'pursue with utmost zeal and determination the goals set in 1990 by the World Conference on Education for All, the Summit of the Nine High Population Countries in 1993, and the first Ministerial Review Meeting of the E-9 countries'.
Cairo: UN International Conference on Population and Development, 5–13 September 1994, Cairo, Egypt	<ul style="list-style-type: none"> ● 'The landmark agreement reached at the Conference makes the well-being of human beings, rather than human numbers, the focus of all national and international activities designed to address issues of population and development with a view to achieving sustained economic growth and sustainable development. The Conference recognized that proper management of the important relationships between population, resources including food security, the environment and development is necessary' (UNFPA, 1999). ● This Conference 'built consensus for integrating family planning programmes into a new, comprehensive approach to reproductive health services and international recognition that educating and empowering women is the most effective way to reduce population growth rates and promote sustainable development (United Nations, 1999). ● Conference follow-up – Reproductive health approach: policy changes in many countries demonstrate a clear commitment to move from vertical (family planning) programmes to a comprehensive approach; many countries have adjusted their policies, terminology and institutional structures, even created a paradigm shift by integrating and linking services; there has also been an increase in the number and variety of partnerships. ● While this conference was focused on population and reproduction issues, it also strongly supported partnerships and collaboration.
Copenhagen: UN World Summit for Social Development, 6–12 March 1995, Copenhagen, Denmark	<ul style="list-style-type: none"> ● Commitments (to eradicate poverty) include promoting and attaining [the] highest attainable standard of physical and mental health; ensuring that children, particularly girls, enjoy their rights and promote the exercise of those rights by making education, adequate nutrition, and health care accessible to them (p. 15). ● Action plan includes 'education, training and labour policies': partnerships between education and other government departments; the active participation of youth and adult learners in design of education and training materials; lifelong learning (p. 50).
Beijing: UN Fourth World Conference on Women, September 1995, Beijing, China	<ul style="list-style-type: none"> ● Agreed on five-year action plan to enhance the social, economic, and political empowerment of women, improve their health, advance their education, and promote their marital and sexual rights (United Nations, 1999).

Conference	Contribution to school health and nutrition
<p>Harare: EI First World Congress (International Conference on School Health and HIV/AIDS Prevention), 1995, Harare, Zimbabwe</p>	<p>Lessons from Harare and the regional seminars include:</p> <ul style="list-style-type: none"> ● Ministers of Education and Health should look upon teachers and their trade unions as partners. ● It is essential that teachers be properly trained, not only in HIV/AIDS, but also in interactive ways of encouraging pupils to articulate their concerns and learn how to protect themselves. ● The design of school programmes should be adapted to the local culture and provide social back-up.
<p>Jakarta: WHO Fourth International Conference on Health Promotion, 21–25 July 1997, Jakarta, Indonesia</p>	<p>The Jakarta Declaration states:</p> <ul style="list-style-type: none"> ● ‘Health is a basic human right . . . essential for social and economic development.’ ● Clear evidence from research and case studies proves that health promotion is effective, especially comprehensive approaches in particular settings, including schools, where people participate in decision-making and health learning. ● Priorities for the 21st century: promote social responsibility for health; increase investments for health development; consolidate and expand partnerships for health; increase community capacity and empower the individual; secure an infrastructure for health promotion.
<p>Washington, D.C.: EI Second World Congress, 25–29 July 1998, Washington, D.C., United States</p>	<p>The Policy Resolution on Health Promotion and School Health includes:</p> <ul style="list-style-type: none"> ● A call for governments to adopt and implement concerted global policies of health development and to promote a global policy of health education; to strengthen policies and resources to support the promotion of school health; to reinforce and broaden the partnerships for health. ● A call for member organizations to play an active role in the development of school health-education policies; to take more account of the crucial role that the school system and workers in education can play through health education; to commit themselves to make the school a healthy place.
<p>Lisbon: UN First World Conference of Ministers Responsible for Youth, 8–12 August 1998, Lisbon, Portugal</p>	<p>The Lisbon Declaration on Youth Policies and Programmes includes:</p> <ul style="list-style-type: none"> ● Ensuring and encouraging the active participation of youth in all spheres of society and in decision-making processes at the national, regional, and international levels. ● Encouraging the inclusion of family life education, reproductive health, and drug and substance abuse prevention in school curricula and extracurricular activities. ● Promoting equal health development for young women and young men and preventing and responding to health problems by creating safe and supportive environments, providing information, and building skills and access to health services through schools and other partners. ● Creating access to basic health care with adequate youth-friendly services that pay particular attention to information and prevention programmes for malaria, malnutrition, diarrhoeal diseases and other conditions.

References

- Personal communications via telephone conversations and e-mail constituted a valuable source of primary research data for this study. Interviews were conducted with the following individuals in 1999 and 2000: D. Bundy; M.T. Cerqueira; V. Chandra-Mouli; L. Cole; A.L. D'Emilio; B. Dick; L. Gregorio; W. Haddad; A.-M. Hoffmann-Barthes; Jiyono; L. Kenny, D. Widdus, J. Knowles, and R. Fuderich (referred to as 'Kenny et al.');
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- ADEA. 1999. *Prospective, Stocktaking Review of Education in Africa*. Paris, Association for the Development of Education in Africa. (Draft Synthesis Document for the 1999 Biennial Meeting.)
- ALLENSWORTH, D.; KOLBE, L. 1987. The Comprehensive School Health Program: Exploring an Expanded Concept. *J. School Health*, Vol. 57, No. 10.
- BAUTISTA, A.; BARKER, P. A.; DUNN, J. T.; SANCHEZ, M.; KAISER, D. L. 1982. The Effects of Oral Iodized Oil on Intelligence, Thyroid Status, and Somatic Growth in School-Age Children from an Area of Endemic Goiter. *Am. J. Clinical Nutrition*, Vol. 35, pp. 127–34. As cited in Levinger, 1994.
- BECKER, G. S. 1995. *Human Capital and Poverty Alleviation*. Washington, D.C., World Bank. (Health Reform Online Working Paper No. 52.) Available on the Internet: http://www.worldbank.org/html/extdr/hnp/hddflash/workp/wp_00052.html
- BELCASTRO, A.; GOLD, R. 1983. Teacher Stress and Burnout: Implications for School Health Personnel. *J. School Health*, Vol. 53, No. 7, pp. 404–7. As cited in WHO, 1996.
- Bellagio Statement on Tobacco and Sustainable Development*. 1995. Bellagio Consultation on Tobacco and Development, 26–30 June 1995. Available on the Internet: <http://www.worldbank.org/html/extdr/hnp/hddflash/conf/conf002.html>
- BERG, A. 1999. School Daaze. *New and Noteworthy in Nutrition*, No. 34. Available on the Internet: <http://www.worldbank.org/html/extdr/hnp/nutrition/nnn/current.htm>
- BERKLEY, S.; JAMISON, D. 1991. *A Conference on the Health of School-Age Children*. Sponsored by the United Nations Development Programme and the Rockefeller Foundation, Bellagio, Italy, 12–16 August 1991. As cited in Levinger, 1994; WHO, 1996.
- BERNARD, A. K. 1999. *The Child-Friendly School: Concept and Practice*. Prepared for the Education Section, UNICEF, New York. (Draft.)
- BILQIS, A. H.; ALI, N.; ZEITLYN, S.; YAHYA, F. S. M.; SHAHEED, N. M. 1994. Promoting Sanitation in Bangladesh. *World Health Forum*, No. 15, pp. 358–62. As cited in Hubley, 1998.
- BIRDTISTLE, I. 2000. Final Report: Strategy Session III.4. A FRESH Start to School Health: Improving learning and educational outcomes by improving health, hygiene and nutrition. Geneva, WHO, Health Promotion Department. (Unpublished report, World Education Forum, Dakar, Senegal, April 2000.)
- BIRKMAN, V. 1995. Introduction to Svendborg Gymnasium. In: *Case Studies – The European Network of Health-Promoting Schools*. Council of Europe/World Health Organization/European Commission. (n.p.) Available on the Internet: <http://www.who.dk/enhps/Publication/3.pdf>
- BISHOP, N. et al. 1988. The School District for Health Promotion. *Health Values*, Vol. 12, No. 2, pp. 41–5. As cited in WHO, 1997.
- BLANEY, C. L. 1993. Sex Education Leads to Safer Sex. *Network*, Vol. 14, No. 2. As cited in WHO, 1998, *Communicating Family Planning in Reproductive Health*.

- BLOEM, M. W.; WEDEL, M.; VAN AGTMALL, E. J.; SPECK, A. J.; SAOWAKORTHA, S.; SCHREURS, W. H. P. 1990. Vitamin A Intervention: Short-Term Effects of a Single Massive Dose on Iron Metabolism. *Am. J. Clinical Nutrition*, Vol. 51, pp. 76–9. As cited in Del Rosso and Marek, 1996.
- BOCAGE, C. 1999. Presentation on Project Lifestyle, FAO/ILSI Workshop on Food-based Dietary Guidelines and Nutrition Education for the Caribbean. Bridgetown, Barbados, Food and Agriculture Organization.
- BOTVIN, G. J.; ENG, A.; WILLIAMS, C. L. 1980. Preventing the Onset of Cigarette Smoking through Life Skills Training. *Preventive Medicine*, Vol. 11, pp. 199–211.
- BOTVIN, G. J. et al. 1984. Alcohol Abuse Prevention through the Development of Personal and Social Competence. *J. Studies on Alcohol*, Vol. 45.
- BUNDY, D. A. P.; GUYATT, H. L. 1989. *Global Distribution of Parasitic Worm Infections*. Paris, UNESCO.
- . 1994. Schools for Health: Focus on Health, Education and the School-age Child. *Parasitology Today*.
- BUNDY, D. A. P.; MCGUIRE, J.; HALL, A.; DOLAN, C. 1998. School Based Health and Nutrition Programmes: A Survey of Donor and Agency Support. Available on the Internet: <http://www.ceid.ox.ac.uk/child/dolan.htm>
- BUNDY, D. A. P.; WONG, M. S.; LEWIS, L. L.; HORTON, J. 1990. Control of Helminths by Delivery of Targeted Chemotherapy through Schools. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, Vol. 84, pp. 115–20. As cited in Levinger, 1994; Del Rosso and Marek, 1996.
- BURT, M. R. 1998. *Why Should We Invest in Adolescents?* Washington, D.C., PAHO/W. K. Kellogg Foundation. Available on the Internet: http://www.paho.org/english/hpp/adol_burt.htm
- CAPLAN, M. et al. 1992. Social Competence Promotion with Inner City and Suburban Young Adolescents: Effects on Social Adjustment and Alcohol Use. *J. Consulting and Clinical Psychology*, Vol. 60, No. 1.
- CARRIN, G.; HOLLMEYER, H.; JONES, J.; EVERARD, M.; RON, A.; SAVIOLI, L.; SEN-HAI, Y. et al. 1999. School Health Insurance as a Vehicle for Health-Promoting Schools. (Report available from WHO/HPR, 20 Avenue Appia, 1211 Geneva 27, Switzerland.)
- CDC. 1996. Guidelines for School Health Programs to Promote Lifelong Healthy Eating. US Centers for Disease Control and Prevention. MMWR series, 14 June 1996, 45(RR-9), pp. 1–41.
- . 1999. Adolescent and School Health. US Centers for Disease Control and Prevention. Website: <http://www.cdc.gov/nccdphp/dash/>
- CERQUEIRA, M. T. 1996. Health-Promoting Schools in the Americas. *World Health*, Vol. 49, No. 4, pp. 12–13.
- CHINAPAH, V. 1997. *Handbook on Monitoring Learning Achievement: Towards Capacity Building*. Paris, UNESCO.
- Conference News No. 5*. n.d. European Network of Health-Promoting Schools. Available on the Internet: <http://www.who.dk/zoro/inv/news5.htm>
- CONNELL, D. B.; TURNER, R. R.; MASON, E. F. 1985. Summary of Findings of the School Health Education Evaluation: Health Promotion Effectiveness, Implementation, and Costs. *J. School Health*, Vol. 55, No. 8, pp. 316–21.
- COOPER, K. J. 1999. Worldwide Effort Focuses on Educating 'the Girl-Child'. *Seattle Times*, 21 February 1999, A17. Available on the Internet: <http://www.seattletimes.com>
- DEL ROSSO, J. M. 1999. *School Feeding Programmes: Improving Effectiveness and Increasing the Benefit to Education. A Guide for Programme Managers*. Oxford, Partnership for Child Development/Wellcome Trust Centre.

- DEL ROSSO, J. M.; MAREK, T. 1996. *Class Action: Improving School Performance in the Developing World through Better Health and Nutrition*. Washington, D.C., World Bank.
- DEVADAS, R. P. 1983. *The Honorable Chief Minister's Nutritious Meal Programme for Children of Tamil Nadu*. Coimbatore, India, Sri Arinashilingam Home Science College. As cited in Del Rosso and Marek, 1996.
- DIVISION OF KNOWLEDGE DEVELOPMENT AND EDUCATION, CENTER FOR SUBSTANCE ABUSE PREVENTION. 1997. *Selected Findings in Prevention: A Decade of Results from the Center for Substance Abuse Prevention (CSAP)*. Washington, D.C., Department of Health and Human Services. (DHHS Publication No. (SMA) 97-3143.)
- DIXEY, R.; HEINDL, I.; LOUREIRO, I.; PEREZ-RODRIGO, C.; SNEL, J.; WARNKING, P. 1999. *Healthy Eating for Young People in Europe: A School-Based Nutrition Education Guide*. Copenhagen, International Planning Committee of the European Network of Health-Promoting Schools.
- DOLAN, C. 1999. *School Based Health and Nutrition Programmes: Findings from a Survey of Donor and Agency Support*. Oxford, Partnership for Child Development, c/o The Wellcome Trust Centre for the Epidemiology of Infectious Disease, University of Oxford.
- DRAIJER, J.; WILLIAMS, T. 1991. *School Health Education and Promotion in Member States of the European Community*. Luxembourg, European Commission. (CEC/V/E/1/LUX/69/91.)
- EI. 1998. *Highlights for the Second World Congress of Education International*, Washington, D.C., July 1998, pp. 115-17. Brussels, Education International.
- ELIAS, M. J. 1991. An Action Research Approach to Evaluating the Impact of a Social Decision-making and Problem-solving Curriculum for Preventing Behavior and Academic Dysfunction in Children. *Evaluation and Program Planning*, Vol. 14, No. 4.
- ERBEN, R. 1997. *Development of Health-Promoting Schools in the Western Pacific Region of WHO*. Geneva/Manila, World Health Organization Regional Office for the Western Pacific. (WPR/EUD/HPR(3)/97.5.)
- ERRECART, M. T.; WALBERG, H. J.; ROSS, J. G.; GOLD, R. S.; FIEDLER, J. L.; KOLBE, L. J. 1991. Effectiveness of Teenage Health Teaching Modules. *J. School Health*, Vol. 61, No.1, pp. 26-30.
- EUROPEAN COMMISSION; WORLD HEALTH ORGANIZATION REGIONAL OFFICE FOR EUROPE; COUNCIL OF EUROPE. 1996. *Facts about the European Network of Health-Promoting Schools*. (n.p.)
- FALCK, V.; KILCOYNE, M. 1984. A Health Promotion Programme for School Personnel. *J. School Health*, Vol. 54, No. 6, pp. 239-42. As cited in WHO, 1996.
- FAO; WHO. 1992. *Nutrition: The Global Challenge. International Conference on Nutrition*. Rome, Food and Agriculture Organization/World Health Organization.
- GACHUHI, D. 1999. *The Impact of HIV/AIDS on Education Systems in the Eastern and Southern Africa Region and the Response of Education Systems to HIV/AIDS: Life Skills Programmes*. Paper prepared for UNICEF at the All Sub-Saharan Africa Conference on EFA 2000, 6-10 December 1999, Johannesburg, South Africa.
- GHANA PARTNERSHIP FOR CHILD DEVELOPMENT. 1996. *Health, Nutrition and Education of the School-Aged Child in Volta Region*. Scientific Coordinating Centre of the Partnership for Child Development, Oxford University, UK. (Reports 1-12 of GPCD.) As cited in PCD, 1997.
- GIBBS, W. 1997. *Evaluation of the Child-to-Child Programme*. Zambia, UNICEF.
- GIRDANO, D. A.; DUSEK, D. E. 1988. *Drug Education: Content and Methods*. 4th ed. New York, Random House.
- GLEWWE, P.; JACOBY, H. 1994. *An Economic Analysis of Delayed Primary School Enrollment and Childhood Nutrition in Ghana*. Washington, D.C., World Bank. (LSMS Working Paper 98.) As cited in Del Rosso and Marek, 1996.
- GOPALDAS, T. 1995. *Incorporating a School Health Package within the Mid Day Meals Programme in Gujarat, India*. Scientific Coordinating Centre of the Partnership for Child Development.

- GRIFFIN, T.; SVENDSEN, R. 1992. *Promising Prevention Strategies for the 90s*. Piscataway, N.J., New Jersey Alcohol/Drug Abuse Resource Center and Clearinghouse.
- GRUNSEIT, A.; KIPPAX, S. 1993. *Effects of Sex Education on Young People's Sexual Behaviour*. Report commissioned by the Youth and General Public Unit, Office of Intervention and Development and Support, Global Programme on AIDS, WHO. North Ryde, Australia, National Centre for HIV Social Research, Macquarie University, n.d. As cited in WHO, 1998; Barnett, 1997.
- HAWKINS, J. D.; CATALANO, R. F.; KOSTERMAN, R.; ABBOTT, R.; HILL, K. G. 1999. Preventing Adolescent Health-Risk Behaviors by Strengthening Protection During Childhood. *Archives of Pediatric and Adolescent Medicine*, Vol. 153, pp. 226–34.
- HECHINGER, F. 1992. *Fateful Choices: Healthy Youth for the 21st Century*. New York, Carnegie Corporation of New York.
- HEFEL, M.; VONDER MUEHL, V. 1998. The Challenge – Addiction Prevention Days, 15–16 October 1997. In: *Country Case Studies, 1998*. European Network of Health-Promoting Schools.
- HOPKINS, D. 1987. *Improving the Quality of Schooling*. Lewes, Falmer Press.
- HUBLEY, J. 1998. *School Health Promotion in Developing Countries: A Literature Review*. Self-published by Dr John Hubley (john@hubley.co.uk).
- HUNTER, S. M.; STEYN, K.; YACH, D.; SIPAMLA, N. 1991. Smoking Prevention in Black Schools: A Feasibility Study. *South African J. Education*, Vol. 11, pp. 137–41. As cited in Hubley, 1998.
- INTER-AGENCY COMMISSION, WCEFA. 1990a. *Background Document*. World Conference on Education for All: Meeting Basic Learning Needs: A Vision for the 1990s. New York, UNICEF House.
- . 1990b. *Final Report*. World Conference on Education for All: Meeting Basic Learning Needs. New York, UNICEF House.
- IBE. 1946. *The Teaching of Hygiene in Primary and Secondary Schools: Summary of the Full French Report of an Inquiry Carried out by the International Bureau of Education in 39 Countries*. Paris, UNESCO, International Bureau of Education. (IBE Publication No. 95.)
- IBE; UNESCO. 1967. *Health Education in Primary Schools: Research in Comparative Education Study*. Paris, UNESCO, International Bureau of Education. (IBE Publication No. 304.)
- IRC. 1988. *Water Supply and Sanitation in Primary School Education in Developing Countries: A Preliminary Study*. International Water and Sanitation Centre (Netherlands). (Occasional Paper Series, No. 13, 46 pp.) As cited in Hubley, 1998.
- ISRAEL, R. C. 1990. *Program and Policy Options for Improved School Nutrition, Health, and Learning in Developing Countries*. Newton, Mass., Education Development Center, Inc.
- JAMISON, D. T.; LESLIE, J. 1990. Health and Nutrition Considerations in Educational Planning: The Cost and Effectiveness of School-Based Interventions. *Food and Nutrition Bulletin*, Vol. 12, pp. 204–15. As cited in Levinger, 1994.
- JAMISON, J. 1993. Health Education in Schools: A Survey of Policy and Implementation. *Health Education J.*, Vol. 52, No. 2, pp. 59–62. As cited in WHO, 1996.
- JAROUSSE, J. P.; MINGAT, A. 1991. Assistance à la formulation d'une politique nationale et d'un programme d'investissement dans le secteur de l'éducation au Bénin. UNESCO/UNDP Project, Benin/89/001. Paris, UNESCO. As cited in Del Rosso and Marek, 1996.
- JENSEN, B. B. 1997a. Pupils as Active Partners. Case Study: Denmark. In: *The Health-Promoting School – An Investment in Education, Health and Democracy: Case Study Book*, p. 16. Copenhagen, European Network of Health-Promoting Schools.
- . 1997b. Pupils as Active Partners. Case Study: Denmark. In: *The Health-Promoting School – An Investment in Education, Health and Democracy: Case Study Book*, p. 21. Copenhagen, European Network of Health-Promoting Schools.

- KATSHA, S.; WATTS, S. 1994. School-based Summer Clubs. Venues for Health Education Using a Partnership Model in Egypt. *Promotion and Education*, Vol. 1, No. 2, pp. 24–8. As cited in WHO, 1997.
- KENNY, L.; REICHENBERG, J.; THOMSON, R. et al. 1999. *Report of a Joint Mission to Slovakia*. UNICEF/Joint United Nations Programme on HIV/AIDS/WHO.
- KHAN, A. H. 1997. The Sanitation Gap: Development's Deadly Menace. In: *The Progress of Nations 1997*. New York, UNICEF.
- KING, J. 1990. *Evaluation of School Feeding in the Dominican Republic*. Santo Domingo, Dominican Republic, CARE. As cited in Del Rosso and Marek, 1996.
- KIRBY, D. 1997. *No Easy Answers: Research Findings on Programs to Reduce Teen Pregnancy*. Washington, D.C., National Campaign to Reduce Teen Pregnancy.
- KIRBY, D.; DICLEMENTE, R. J. 1994. School-based Interventions to Prevent Unprotected Sex and HIV among Adolescents. In: R. J. DiClemente and J. L. Peterson (eds.), *Preventing AIDS: Theories and Methods of Behavioral Intentions*, pp. 7–139. New York, Plenum Press.
- KIRBY, D.; SHORT, L.; COLLINS, J.; RUGG, D.; KOLBE, L.; HOWARD, M.; MILLER, B.; SONENSTEIN, F.; ZABIN, L. 1994. School-Based Programs to Reduce Sexual Risk Behaviors: A Review of Effectiveness. *Public Health Reports*, Vol. 109, No. 3, pp. 339–60.
- KNOWLTON, R. G.; TETELMAN, E. H. 1994. Educators Respond to New Jersey's 'One-Stop-Shopping' Program. In: R. A. Levin (ed.), *Greater than the Sum: Professionals in a Comprehensive Services Model*. Chicago, University of Illinois at Chicago. (Teacher Education Monograph No. 17.)
- KOLBE, L., 1986. Increasing the Impact of School Health Promotion Programs: Emerging Research Perspectives. *Health Education*, Vol. 16, No 10, pp. 47–52.
- KOLBE, L.; COLLINS, J.; CORKGE, P. 1997. Building the Capacity of Schools to Improve the Health of the Nation: A Call for Assistance from Psychologists. *Am. Psychologist*, Vol. 52, No. 3, pp. 256–65.
- KOLBE, L.; JONES, J.; BIRDTISTLE, I.; VINCE-WHITMAN, C. 2000. Building the Capacity of Schools to Improve the Health of Nations. In: C. Koop, C. Pearson, H. Schwarz (eds.), *Global Health in the 21st Century*, San Francisco, Jossey-Bass.
- KOLBE, L.; KANN, L.; COLLINS, J. 1993. Overview of the Youth Risk Behavior Surveillance System. *Public Health Reports*, Vol. 108, Supplement 1, pp. 2–10.
- KOLBE, L.; KANN, L.; COLLINS, J.; LYSSELL, M.; PATEMAN, E.; WARREN, C. 1995. The School Health Policies and Programs Study (SHPPS): Context, Methods, General Findings and Future Efforts. *J. School Health*. Vol. 65, No. 8, pp. 339–43.
- KOMRO, K. A.; PERRY, C. L.; MURRAY, D. M.; VEBLEN-MORTENSON, S.; WILLIAMS, C. L.; ANSTINE, P.S. 1996. Peer-Planned Social Activities for Preventing Alcohol Use among Youth Adolescents. *J. School Health*, Vol. 66, pp. 328–34.
- KRISTOF, N. D. 1997. Desk, 25 May (Sunday). Why Africa Can Thrive like Asia. *New York Times*, Week in Review.
- LANSDOWNE, R. 1995. *Child-to-Child: A Review of the Literature*. London, Child-to-Child Trust/Institute of Education. As cited in Del Rosso and Marek, 1996.
- LEVINGER, B. 1994. *Nutrition, Health and Education for All*. Newton, Mass./New York, Education Development Center/United Nations Development Programme.
- . 1996. *Human Capacity Development Across the Lifespan*. Newton, Mass./New York, Education Development Center/UNDP.
- LIN, V. 1999. *Health Protection and Health Promotion: Harmonizing our Responses to the Challenges of the 21st Century*. Presented at a meeting with the same title, Manila, Philippines, 16–20 August 1999.

- MARX, E. 1998. *Illustrating National Partnerships for Improving Health through Schools*. Presentation at a meeting of the School Health Component of WHO's Mega Country Initiative, Washington, D.C., 25–26 July 1998.
- MARX, E.; WOOLEY, S. F.; NORTHROP, D. (eds.) 1998. *Health Is Academic: A Guide to Coordinated School Health Programs*. New York, Teachers College Press.
- MAYSEY, D. et al. 1988. School Work Site Wellness Programmes: 1988. A Strategy for Achieving the 1990 Goals for a Healthier America. *Health Education Quarterly*, Vol. 15, No. 1, pp. 54–62. As cited in WHO, 1996.
- MCCAULEY, A. P.; SALTER, C. 1995. Meeting the Needs of Young Adults. *Population Reports*, J(41). Baltimore, Md., Johns Hopkins School of Public Health, Population Information Program.
- MCCONAUGHY, S. H.; KAY, P. J.; FITZGERALD, M. 1998. Preventing SED through Parent-Teacher Action Research and Social Skills Instruction: First-Year Outcomes. *J. Emotional and Behavioral Disorders*, Vol. 6, No. 2.
- MEHROTRA, S.; JOLLY, R. (eds.) 1997. *Development with a Human Face*. Oxford, Clarendon Press.
- MEMON, F. 1999. School Health in Pakistan: National Strategies. In: *Improving Health through Schools: National and International Strategies*. Geneva, WHO. (Unpublished.)
- MEYERS, A. F.; SAMPSON, A. E.; WEITZMAN, M.; ROGERS, B. L.; KAYNE, H. 1989. School Breakfast Program and School Performance. *Am. J. Disabled Children*, Vol. 143, pp. 1234–9. As cited in Del Rosso, 1999.
- MONSMA, M.; DAY, R.; ST ARNAUD, S. 1992. Handwashing Makes a Difference. *J. School Health*, Vol. 62, pp. 109–11. As cited in Hubley, 1998.
- MOOCK, P. R.; LESLIE, J. 1986. Childhood Malnutrition and Schooling in the Terai Region of Nepal. *J. Development Economics I*, Vol. 20, pp. 33–52. As cited in Del Rosso and Marek, 1996.
- MOORE, E. 1994. *Evaluation of the Burkina Faso School Feeding Program*. Baltimore, Md., Catholic Relief Services. As cited in Del Rosso and Marek, 1996.
- MOTT, K. E. 1995. *History of International School Health Initiatives*. Feeder Paper to WHO/HEP/ECCSHEP/BP/95.2. Geneva, World Health Organization. (Draft.)
- NOKES, C.; GRANTHAM-MCGREGOR, S. M.; SAWYER, A. W.; COOPER, E. S.; ROBINSON, B. A.; BUNDY, D. A. P. 1992. Moderate to Heavy Infections of *Trichuris trichiura* Affect Cognitive Function in Jamaican School Children. *Parasitology*, Vol. 104, pp. 539–47. As cited in Del Rosso and Marek, 1996.
- NORTHEAST CAPT. 1999. *The Correlation between AOD and Violence*. Available on the Internet: <http://www2.edc.org/capt/services/products/papers/aodv/>
- O'DONNELL, L.; STUEVE, A.; SAN DOVAL, A. et al. 1998. Violence Prevention and Young Adolescents' Participation in Community Youth Service. *J. Adolescent Health*, Vol. 24, No. 1, pp. 28–37.
- OLEWEUS, D. 1990. *A National Campaign in Norway to Reduce the Prevalence of Bullying Behaviour*. Paper presented to the Society for Research on Adolescence Biennial Meeting, Atlanta, 10–12 December 1990. As cited in WHO, 1994.
- PAHO. 1999. *Health-Promoting Schools Networks in the Countries*. Pan American Health Organization. Available on the Internet: http://www.paho.org/english/hpp/hs_dir.htm
- PCD. 1997. *Better Health, Nutrition and Education for the School-aged Child*. Partnership for Child Development. Available on the Internet: <http://www.ceid.ox.ac.uk/child/better.htm>
- . 1999a. *Ghana Partnership for Child Development*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/gpcd.htm>
- . 1999b. *Health and the School-Aged Child*. Partnership for Child Development. Available on the Internet: <http://www.ceid.ox.ac.uk/schoolhealth/introduction.htm>
- . 1999c. *Health Education and the Partnership for Child Development*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/healtheduc.htm>

- . 1999d. *Improved Mid Day Meal Programme (MDMP), Gujarat, India*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/MDMP.htm>
- . 1999e. *Indonesia Partnership for Child Development, Kemitraan Indonesia untuk Perkembangan Anak (MITRA)*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/MITRA.htm>
- . 1999f. *School Health Programmes – Case Histories Guinea*. Partnership for Child Development. Available on the Internet: <http://www.ceid.ox.ac.uk/schoolhealth/case%20histories/guinea.htm>
- . 1999g. *The Partnership for Child Development*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/pcd.htm>
- . 1999h. *The Partnership for Child Development: Promoting the Health, Nutrition and Education of School-age Children*. Partnership for Child Development. Available on the Internet: <http://server1.zoo.ox.ac.uk/child/Home.htm>
- PERRY, C. L.; GRANT, M. 1991. A Cross-cultural Pilot Study on Alcohol Education and Young People. *World Health Statistics Quarterly – Rapport Trimestriel de Statistiques Sanitaires Mondiales*, Vol. 44, pp. 70–3. As cited in Hubley, 1998.
- PERRY, C. L.; WILLIAMS, C. L.; FORSTER, J. L.; WOLFSON, M.; WAGENAAR, A. C.; FINNEGAN, J. R.; MCGOVERN, P. G.; VELEN-MORTENSON, S. V.; KOMRO, K. A.; ANSTINE, P. S. 1993. Background, Conceptualization and Design of a Community-wide Research Program on Adolescent Alcohol Use: Project Northland. *Health Education Research*, Vol. 8, pp. 125–36.
- PERRY, C. L.; WILLIAMS, C. L.; VELEN-MORTENSON, S.; TOOMEY, T. L.; KOMRO, K. A.; ANSTINE, P. S.; MCGOVERN, P. G.; FINNEGAN, J. R.; FORSTER, J. L.; WAGENAAR, A. C.; WOLFSON, M. 1996. Project Northland: Outcomes of a Community-wide Alcohol Use Prevention Program during Early Adolescence. *Am. J. Public Health*, Vol. 86, pp. 956–65.
- PHILLIP, L. 1995. *International Movements, Initiatives, and Programmes that have Provided Opportunities in Strengthening School Health in International, Regional, and Local Levels*. Geneva, WHO.
- POENTINEN, T. 1998. School, Democracy – is there any? In: *Country Case Studies, 1998*. European Network of Health-Promoting Schools. (n.p.)
- POLLITT, E. 1990. *Malnutrition and Infection in the Classroom*. Paris, UNESCO.
- POLLITT, E.; GORMAN, K.; ENGLE, E.; MARTORELL, R.; RIVERA, J. 1993. *Early Supplementary Feeding and Cognition: Effects over Two Decades*. Chicago, University of Chicago Press. (Society for Research in Child Development Monograph 235.) As cited in Del Rosso and Marek, 1996.
- POSTRADO, L. T.; NICHOLSON, H. J. 1992. Effectiveness in Delaying the Initiation of Sexual Intercourse of Girls Aged 12–14: Two Components of the Girls Incorporated Preventing Adolescent Pregnancy Program. *Youth and Society*, Vol. 23, No. 3.
- ROSS, J. G.; LUEPKER, R. V.; NELSON, G. D.; SAAVEDRA, P.; HUBBARD, B. M. 1991. Teenage Health Teaching Modules: Impact of Teacher Training on Implementation and Student Outcomes. *J. School Health*, Vol. 61, No. 1, pp. 31–4.
- ROTHMAN, M.; COLLINS, J. forthcoming. As cited in Del Rosso and Marek, 1996.
- ROTHMAN, M.; EHRETH, J.; PALMER, C. et al. n.d. The Potential Costs and Benefits of Selected Components of School Health Education Programs. *Am. J. Health Promotion*. As cited in WHO, 1996d.
- RUTTER, M. et al. 1979. *Fifteen Thousand Hours*. London, Open Books.
- SAMMONS, P.; HILLMAN, J.; MORTIMORE, P. 1994. *Characteristics of Effective Schools*. London, Office for Standards in Education (OFSTED).
- SANDAL, V. 1995. Teacher Empowerment in India: Making Schools 'Child-Friendly'. In: *First Call for Children*. New York, UNICEF.

- SCRIPTURE UNION. n.d.. *All the Right Moves: Lifeskills for an AIDS-free Generation: Twelve to Fifteen Year Programme*. Rondebosch, South Africa, Scripture Union. As cited in WHO, 1994.
- SELOWSKY, M. 1981. Nutrition, Health and Education: The Economic Significance of Complementarities at Early Age. *J. Dev. Econ.*, Vol. 9, pp. 331–46.
- SEN, A. K. 1999. *Development as Freedom*. New York, Knopf.
- SESHADRI, S.; GOPALDAS, T. 1989. Impact of Iron Supplementation on Cognitive Functions in Pre-school and School-aged Children: The Indian Experience. *Am. J. Clinical Nutrition*, Vol. 50, Supplement, pp. 675–84. As cited in Del Rosso and Marek, 1996.
- SHORT, R.; TALLEY, R.; KOLBE, L. (eds.). 1999. Integrative Education, Health, and Social Services for Young People. *J. Educational and Psychological Consultation*, Vol. 10, No. 3, pp. 193–313.
- SHRESTHA, R. M. 1994. Effects of Iodine and Iron Supplementation on Physical, Psychomotor, and Mental Development in Primary School Children in Malawi. Ph.D. thesis, University of Malawi, Wapeningen. As cited in Del Rosso and Marek, 1996.
- SHUEY, D. A.; BABISHANGIRE, B. B.; OMIAT, S.; BAGARUKAYO, H. 1999. Increased Sexual Abstinence among In-school Adolescents as a Result of School Health Education in Soroti District, Uganda. *Health Education Research: Theory and Practice*, Vol. 14, pp. 411–19.
- SIMEON, D. T.; GRANTHAM-MCGREGOR, S. 1989. Effects of Missing Breakfast on the Cognitive Functions of School Children of Differing Nutritional Status. *Am. J. Clinical Nutrition*, Vol. 49, 646–53. As cited in Del Rosso, 1999.
- SINGER, M. I.; ANGLIN, T. M.; SONG, L.; LUNGHOFFER, L. 1995. Adolescents' Exposure to Violence and Associated Symptoms of Psychological Trauma. *J. Am. Medical Association* 1, Vol. 273, No. 6, pp. 477–82. As cited in WHO, 1998e.
- STERNBERG, R. J.; GRIGORENKO, E. L.; NOHES, C. 1997. Effects of Children's Ill Health on Cognitive Development. In: M. E. Young (ed.), *Early Childhood Development: Investing in our Children's Future*, pp. 85–125. New York, Elsevier.
- SUSSMAN, S.; DENT, C. W.; STACY, A. W.; SUN, P.; CRAIG, S.; SIMON, T. R.; BURTON, D.; FLAY, B. 1993. Project Towards No Tobacco Use: 1-year behavior outcomes. *Am. J. Public Health*, Vol. 83, pp. 1245–50.
- TEACHMAN, J. D.; PAASCH, K.; CARVER, K. 1997. Social Capital and the Generation of Human Capital. *Social Forces*, Vol. 75, No. 4, pp. 1–17. As cited in Social Capital Database, World Bank. <http://www.worldbank.org/poverty/scapital/index.htm>
- THOMAS, C. L. (ed.) 1989. *Taber's Cyclopedic Medical Dictionary*. Philadelphia, F. A. Davis Company.
- TOBLER, N. 1998. *A Meta-Analysis of School-Based Prevention Programs*. (Draft, 28 August 1998.)
- TOLAN, P.; GUERRA, N. 1994. *What Works in Reducing Adolescent Violence: An Empirical Review of the Field*. Boulder, Colo., Center for the Study and Prevention of Violence.
- UNDP. 1992. *Partnership for Child Development: an International Programme to Improve the Health and Education of Children through School-based Services*. New York, United Nations Development Programme. (Interregional project document.) As cited in Levinger, 1994.
- UNESCO, Section for Science and Technology Education. n.d. Questionnaire on School Health Issues. Paris, UNESCO. (Unpublished draft.)
- UNESCO. 1996. *Learning: The Treasure Within*. Report to UNESCO of the International Commission on Education for the Twenty-first Century. As cited in Hoffmann-Barthes, 2000.
- UNFPA. 1999. *ICPD+5*. United Nations. (E/CN.9/1999/PC/CPP.1/Rev.1.) Available on the Internet: <http://www.unfpa.org/icpd/report&doc/chaiman-rev1.htm>.
- UNICEF. 1995. *Price List, January–June 1995*. Essential Drugs, Supply Division, UNICEF, Copenhagen. As cited in Del Rosso and Marek, 1996.

- . 1996. *The State of the World's Children*. New York, Oxford University Press.
- . 1997. *The Progress of Nations 1997*. New York, UNICEF.
- . 1998a. *Education for All: UNICEF Regional Monitoring Report No. 5*. Paris, UNICEF.
- . 1998b. *The Progress of Nations 1998*. New York, UNICEF.
- . 1999. *The State of the World's Children 1999: Education*. New York, UNICEF.
- . n.d. *Global Education: Making Basic Learning a Child-Friendly Experience*. Paris, UNICEF.
- UNITED NATIONS. 1999. *UN Conferences: What have they accomplished?* United Nations, Department of Public Information. (DPI/1825/Rev.7–June 1999; <http://www.un.org/News/facts/confercs.htm>)
- VENEO, B.; DOONAR, P. 1996. A School in Papua New Guinea. *World Health*, Vol. 49, No. 4, p. 25.
- VINCE-WHITMAN, C. 1995. *Strategies and Methods to Change Systems*. Paper presented to the Education Development Center Board of Trustees, 21–22 October 1995, American Academy of Arts and Sciences, Cambridge, Mass.
- VINCE-WHITMAN, C.; JONES, A.; GARCIA, T.; HAGEN, N. 1997. *Rapid Assessment and Action Planning Process (RAAPP): A Means to Build Capacity and Infrastructure for Promoting Health through Schools*. Paper presented at WHO Fourth International Conference on Health Promotion, Jakarta, Indonesia, 21–25 July 1997.
- VOMDOHRE, K.; WULLE, A. K. 1994. Developing a Health-Promoting School in Germany. In: *Case Studies: The European Network of Health-Promoting Schools*. Council of Europe/WHO/ European Commission.
- WEISEN, R. B.; LEE, J.; PELLAUX, D. 1995. *Life Skills Education as a Component of a Comprehensive School Health Programme*. Geneva, WHO.
- WERNER, M. 1991. *Adolescent Substance Abuse: Risk Factors and Prevention Strategies*. *Maternal and Child Health Technical Information Bulletin*. Washington, D.C., National Center for Education in Maternal and Child Health.
- WFP. 1996. Report on Pilot School Feeding Programme. Evaluation report, World Food Programme/Malawi. (Unpublished.) As cited in Del Rosso, 1999.
- WHO. 1986. *Ottawa Charter*. Geneva, WHO.
- . 1990. *Health Education for All: Enabling School-age Children and Adults for Healthy Living*. Presentation for round table 14 of World Conference on Education for All, Jomtien, Thailand, 5–9 March, 1990. Geneva, WHO. As cited in Hubley, 1998.
- . 1993. *Comprehensive School Health Education, Recommendations and Guidelines for Implementing and Strengthening Comprehensive School Health Education in SouthEast Asia Region*. Geneva, WHO. (n.p.)
- . 1994. *Life Skills Education in Schools*. Geneva, WHO. (WHO/MNH/PSF/93.7A.Rev.2.)
- . 1996a. *Global School Health Initiative*. Geneva, WHO. (WHO/HPR/98.4.)
- . 1996b. *Improving School Health Programmes: Barriers and Strategies*. Geneva, WHO. (WHO/HPR/HEP/96.2.)
- . 1996c. *Research to Improve Implementation and Effectiveness of School Health Programmes*. Geneva, WHO. (WHO/HPR/HEP/96.3.)
- . 1996d. *The Status of School Health*. Geneva, WHO. (WHO/HPR/HEP/96.1.)
- . 1997a. *Coming of Age: From Facts to Action for Adolescent Sexual and Reproductive Health*. Geneva, WHO. As cited in Senderowitz, 1998.
- . 1997b. *Primary School Physical Environment and Health*. Geneva, WHO. (WHO/SCHOOL/97.2, WHO/EOS/97.15.)

- . 1997c. *Promoting Health through Schools: Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion*. Geneva, WHO. (WHO Technical Report Series 870.)
 - . 1997d. *WHO Information Series on School Health: Strengthening Interventions to Reduce Helminth Infections*. Geneva, WHO. (WHO/SCHOOL/96.1, WHO/HPR/HEP/96.10.)
 - . 1998a. *It's a Wormy World*. Geneva, WHO. (WHO/CTD/SIP/98.4.)
 - . 1998b. Mega Country Health Promotion Network. Report of WHO Headquarters Meeting, Geneva, Switzerland, 18–20 March 1998. (Unpublished document, available from WHO, HPR/HEP, 1211 Geneva 27, Switzerland.)
 - . 1998c. *The Tobacco Epidemic: A Global Public Health Emergency Agenda*. Geneva, WHO. (Fact Sheet 118.)
 - . 1998d. *WHO Information Series on School Health: Healthy Nutrition: An Essential Element of a Health-Promoting School*. Geneva, WHO. (WHO/SCHOOL/98.4, WHO/HPR/HEP/98.3.)
 - . 1998e. *WHO Information Series on School Health: Violence Prevention: An Important Element of a Health-Promoting School*. Geneva, WHO. (WHO/HPR/HEP/98.2.)
 - . 1998 draft. *Preventing HIV/AIDS/STDs and Related Discrimination: An Important Responsibility of Health-Promoting Schools*. Geneva, WHO. (WHO/HPR/HEP/98.6.)
 - . 1999. School-Based Efforts Related to Sexuality, Family Life, Reproductive Health and Population Issues: Important Entry Points for the Development of a Health-Promoting School. Geneva, WHO. (Unpublished draft, WHO Information Series on School Health.)
 - . 2000. *Local Action: Creating Health Promoting Schools*. Geneva, WHO. (WHO/NMH/HPS/00.3)
 - . n.d.a *Improving the Accessibility of Health Services that Meet the Sexual and Reproductive Health Needs of Adolescents in School: Rapid Assessment Tool*. Geneva, WHO Adolescent Health and Development Programme.
 - . n.d.b Primera reunion y asamblea constitutiva-red latinoamericana de escuelas promotoras de salud, 11–13 November 1996, San Jose, Costa Rica. (Unpublished report, available from WHO Regional Office for the Americas, Washington, D.C. 20037, United States.)
 - . n.d.c *Regional Guidelines for the Development of Health-Promoting Schools*. Manila, Philippines, WHO Regional Office for the Western Pacific. (Health-Promoting Series 5.)
- WHO; MINISTRY OF HEALTH, REPUBLIC OF INDONESIA. 1997. *The Jakarta Declaration*. Geneva, WHO. (WHO/HPR/HEP/4ICHP/BR/97.4.)
- WHO; UNESCO; UNICEF. 1992. *Comprehensive School Health Education: Suggested Guidelines for Action*. Geneva, WHO. (n.p.) (WHO/UNESCO/UNICEF/92.2.)
- WHO; UNFPA; UNICEF. 1995. *Programming for Adolescent Health*. Discussion paper prepared for the Study Group on Programming for Adolescent Health. Saillon, Switzerland, 29 November–4 December 1995. As cited in Senderowitz, 1998.
- WHO/AFRO. 1999. Personal Communication with WHO Regional Office for Africa.
- WHO/GPA. 1994. *School Health Education to Prevent AIDS and STD: A Resource Package for Curriculum Planners*. WHO/Global Programme on AIDS, Geneva. As cited in WHO, 1994.
- WHO/WPRO. 1999. Personal communication with WHO Regional Office for the Western Pacific.
- WILSON, D., 1987, 1996. Fernandez-Kelly, 1995. As cited in World Bank, 1999a.
- WILSON, D.; MPARADZI, A.; LAVELLE, E. 1992. An Experimental Comparison of Two AIDS Prevention Interventions among Young Zimbabweans. *J. Social Psychology*, Vol. 132, No. 3, pp. 415–17.
- WOLD, B. (ed.). 1993. *Health Behaviour in School-aged Children. A WHO Cross-national Survey*. Resource package of questions 1993/94. Research Centre for Health Promotion, University of Bergen.

- WOLD, B.; AAR, L. E. 1990. *Health Behaviour in School-aged Children. A WHO Cross-national Survey*. Summary of publications from the first (1983/84) and second survey (1985/86). Research Centre for Health Promotion, University of Bergen.
- WORLD BANK. 1993. *World Development Report 1993: Investing in Health*. New York, Oxford University Press.
- . 1999a. *Social Capital for Development: Social Capital and Education*. Available on the Internet: <http://www.worldbank.org/poverty/scapital/topic/edu2.htm>
- . 1999b. *Social Capital for Development: What is Social Capital?* Available on the Internet: <http://www.worldbank.org/poverty/scapital/whatsc.htm>
- . n.d. *The World Bank Group in Africa: An Overview*. Available on the Internet: <http://www.worldbank.org/afr/overview/htm>
- XU, L.-S.; PAN, B.-J.; LIN, J.-X.; CHEN, L.P.; YU, S.-H.; JONES, J. 2000. Creating Health-Promoting Schools in Rural China: A Project Started from Deworming. *Health Promotion International*, Vol. 15, pp. 197–206.
- ZABIN, L. S.; HIRSCH, M. B.; SMITH, E. A.; STRETT, R.; HARDY, J. B. 1986. Evaluation of a Pregnancy Prevention Programme for Urban Teenagers. *Family Planning Perspectives*, Vol. 18, pp. 119–26.

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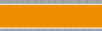












Education for All 2000 Assessment



This thematic study on School Health and Nutrition reviews what has happened in the field of school health and nutrition since the World Conference on Education for All (Jomtien, Thailand, 1990), identifies strategies and interventions that have proven effective, and suggests actions for the decade to come. This study also explores conceptual frameworks in school health and nutrition that developed during the 1990s and reviews regional trends, activities and barriers for school health. The information presented in this study is essential to policy- and decision-makers who are committed to achieving EFA because the link between learning and health clearly shows that it is unlikely that EFA can achieve its goals without significant improvements in the health of students and teachers.

School Health and Nutrition is one of the thematic studies published by UNESCO for the International Consultative Forum on Education for All as part of the Education for All 2000 Assessment. This worldwide evaluation was undertaken towards the end of the decade following the World Conference on Education for All (Jomtien, Thailand, 1990) as preparation for the World Education Forum on education for all held in Dakar (Senegal) in April 2000.

The complete list of titles in the series is given below.

-  Achieving Education for All: Demographic Challenges
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-  Education in Crisis: The Impact and Lessons of the East Asian Financial Shock 1997-99
-  Education in Situations of Emergency and Crisis: Challenges for the New Century
-  Funding Agency Contributions to Education for All
-  Girls' Education
-  Inclusion in Education: The Participation of Disabled Learners
-  Literacy and Adult Education
-  Reason for Hope: The Support of NGOs to Education for All
-  School Health and Nutrition
-  Textbooks and Learning Materials 1990-99

Each thematic study aims to provide theoretical vision and practical guidance to education planners and decision-makers at national and international levels. In order to provide a global review, they draw upon and synthesize submissions from partner institutions and agencies in each of the EFA regions. They attempt to describe 'best practices' as well as successful and unsuccessful experiments in policy implementation.