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Contents

CURRENT LITERATURE REVIEW IN EDUCATION

You are reading a literature review compiled by members of Veille & Analyses, a department of the French Institute of Education within the higher education institution ENS Lyon. We analyse research literature and activities throughout scientific and institutional productions in education in order to map out key research trends on current topics and produce states of the art in the educational research field.

TOWARD HEALTHY SCHOOLS HEALTH EDUCATION (PART 2)

Part 1 of this study examined recent policy developments in the areas of public health and health promotion in education. The focus was on the relationship between health and education and potential changes in health-related behaviors and skills (Gaussel, 2011). Part 2 examines the question of schools as promoters of health (or healthy schools) and a range of comprehensive approaches to health education in school settings, focusing specifically on current practices in schools.

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Comprehensive approaches to health promotion and education aim to influence individual health behaviors, to change behaviors and to improve academic performance. One implication of this view is that the comprehensive approach needs to be adopted by the educational community as a whole and to be integrated into practice. Given the recent developments in this area, it is important to assess the feasibility and implementation of comprehensive approaches based on literature reviews and recent research by international scholars and experts, with particular reference to health measures and actions in schools.

After providing a typology of comprehensive approaches to health promotion and education, this study will examine the conditions for implementing comprehensive approaches based on a range of international examples, before assessing the impact of recent measures and their effectiveness in various political and geographical contexts.

What is a health promoting school? A health promoting school can be defined as "[a]n environment in which all members of the educational community work together to provide students with an enriching environment and experience to promote and maintain health. This includes a formal and informal curriculum, the creation of a safe and healthy environment in schools, the provision of appropriate services, and the involvement of families and the community in efforts to promote health" (Simard & Deschesnes, 2011 based on the definition given by the World Health Organization).

COMPREHENSIVE APPROACHES TO HEALTH PROMOTION: DEFINITIONS AND CONTEXTS

The concept of health promotion in schools has changed significantly in recent years and has a different meaning in different countries. Broadly speaking, the main purpose of early initiatives to improve student health was to disseminate health information (defined in some cases as an integral part of the curriculum) in order to change risk behaviors. However, because it involves limited measures, "traditional" health education has often been deemed ineffective. As a result, more comprehensive strategies aimed at changing health behaviors and focusing on the environment have been developed in recent years to educate students while taking account of their personal characteristics, in addition to various interpersonal, contextual, social and political factors.

The idea that the social and educational environment has an impact on academic performance and student health can be traced back to the early twentieth century, before re-emerging in the 1970s. In a report for the Agence de la Santé et des Services Sociaux du Québec, (Désy, 2009) examined an ecological model derived from public health theories and reflecting the central role given to empowerment and participation since the adoption of the Ottawa Charter in 1986.

THE HEALTHY SCHOOL APPROACH AND THE HEALTH PROMOTING SCHOOLS APPROACH IN EUROPE AND QUEBEC

A matter of coherence

The Healthy School approach is based on the idea that it is more important to address several factors than to focus on specific health problems and their immediate causes. The aim is to focus on a wide range of health factors (including the environment) and the risk factors associated with certain behaviors among young people. In this view, research on the distal causes of behavior (i.e. relational and environmental causes) is required to compensate for the limitations of approaches focused solely on proximal causes (i.e. cognitive and affective causes) and to ensure the effectiveness of health promotion interventions in schools (Désy, 2009).

The Healthy School approach is an example of the **ecological approach to behavior *"focused on individuals and their relationship with their physical and social environment.*** *The aim is to promote the overall development of the individual and their ability to adopt health-enhancing behaviors based on personal knowledge and cognitive skills, using systemic analysis"* (Gaussel, 2011).

The Healthy School approach is designed to enable all members of the educational community to collaborate in order to provide students with an environment and an educational experience that enriches their lives and promotes health and well-being. It includes both a formal and an informal health curriculum and aims to create a favorable environment in which families and external partners are fully involved. The Healthy School approach focuses on:

- self-esteem;
- social skills;
- healthy lifestyle habits;
- safe and healthy behaviors;
- the family and school environment;
- preventive services.

> *"The Healthy School approach is a comprehensive approach aimed at improving health and academic performance through learning and teaching experiments initiated by schools"* (St-Leger et al, 2010).

Implementation phases of the health promoting schools model

Initial experimentation stage :
- Sporadic or short-term developments occur that may be the result of a specific political concern (and the resulting allocation of resources) about issues such as HIV/AIDS and drug use.
- A terminology specific to health promoting schools is adopted by educational policy makers. Initially, this may not be reflected by changes in practice.

Strategic development stage:
- The education begins to see the benefits of health promoting schools by being able to respond to educational and social needs in schools and communities. The authorities build their capacities through staff training and development.
- A more strategic approach develops through partnerships at a national (governmental) level and/or at the level of central/regional education authorities.
- The health sector funds jobs in the education sector.
- More sophisticated studies and progress assessments are conducted and models are developed as the political image of the concept begins to improve and expectations increase.

Establishment phase:
- The education sector takes greater responsibility for promoting health in schools and integrates health promotion into mainstream/standard education.
- At a school level, health promotion becomes institutionalized, i.e. becomes part of the core values of the school and its everyday life Young (2005).

By contrast, the European approach, developed by the *European Network for Health Promoting School* (ENHPS), the WHO and the *School for Health* (SHE) network, involves less collaboration between public health networks, social services and schools. Compared to the Healthy School approach, which tends to focus on individuals, the HPS approach focuses more on:

- school health policies;
- the physical environment of schools;
- personal health skills developed through the curriculum ;
- links between the school and the community;
- school-based health services.

The wider role of these interventions extends beyond prevention to promote health and physical, psychological and social well-being. Here, empowerment is seen as a key strategy of health promotion in schools.

> *"Health and education are interdependent: healthy students are better learners, and better-educated individuals are healthier. Research has shown that Comprehensive School Health is an effective way to tap into that linkage, improving both health and educational outcomes and encouraging healthy behaviors that last a lifetime"* (Public Health Agency of Canada).

The *Healthy Schools Toolkit* includes an overview of the healthy school approach, examples of schools that have improved student health and well-being, a planning model, an assessment model and frameworks to identify needs and select activities and interventions.

Health education programs

Health education programs have often preceded the implementation of comprehensive approaches and are sometimes an integral part of the curriculum. In these approaches, health education is generally taught in traditional lessons, with teachers providing information on risk behaviors and the associated beliefs and attitudes. The interest of the Healthy School approach is that it also includes a range of measures beyond lessons, such as actions related to school climate, the physical and social environment, and internal and external links and partnerships, notably with health services (Désy, 2009). The volume edited by Gray, Young and Barnekow (2007) illustrates the challenges posed by collaborations that may seem "unnatural" in a school environment. Their detailed work includes an action plan outlining the strategies that need to be implemented as part of the ENHPS and presents examples of success in this area.

HEALTHY SCHOOLS IN BRITAIN

Practices and objectives

- The first objective of this program (jointly implemented by the British ministries of health and education) is to encourage collaboration between the various levels of education, local partners and central government in order to promote a truly comprehensive approach to health promotion and education based around specific themes, including:
- citizenship;
- sexual relations;
- drugs (legal and illegal);
- healthy eating;
- physical activity;
- well-being;
- safety.

The main idea is to create an environment in which **good practices are integrated into the culture and ethos of the school.** The comprehensive approach addresses each of these issues based on guiding principles such as leadership and management, curriculum organization and policies of change.

In the accompanying booklet provided by the Ministry of Education, the *National Healthy School Standard Guidance* (1999), standards are grouped according to three main criteria:

- strategic and operational collaboration;
- management, planning and good practice;
- implementation of the program in local schools.

By defining priorities, the British government aims to support initiatives such as the *Teenage Pregnancy Strategy*, designed to promote projects and to collect and analyze data. At a local level, projects in this area are part of plans common to a number of health and prevention organizations, services and associations. At a school level, the integration of related activities serves to develop indicators, to assess impacts and, above all, to incorporate objectives in the school project and to follow a cohort of students targeted on the basis of their academic performance in relation to their personal and social development and their health.

The Healthy School program promotes health and well-being throughout the educational community based on a planning process that takes account of the curriculum and the physical and affective environment to promote healthy lifestyles (Department of Health and Department of Education and Skills, United Kingdom).

The effectiveness of Healthy School programs

While there has been some research on the relationship between health and academic performance (Meara, Richards et Cutler, 2008 ; Brønnum-Hansen et Baadsgaard, 2008 ; Ferrie *et al.*, 2009 ; Denney, *et al.*, 2010), there is less evidence for the effectiveness of the comprehensive approach.

Warwick, *et al.* (2004) provide an assessment of the National Healthy School Standard based on a study conducted in 31 schools. Their findings indicate that:

- schools generally want to be involved in the Healthy School program and the resulting work environment;
- participation in the program helps to improve the image of health-related activities, especially when these are run jointly by people who already collaborate;
- despite having a relatively limited budget, the program has proved very useful in providing a framework governing work and health-related activities;
- in order for it to have a positive and long-term impact, the program must be actively followed by students with the support of teachers and members of the educational community involved in the program;
- the objectives are largely geared toward improving academic performance (the most attractive outcome from the point of view of headteachers and parents), promoting social integration and reducing health inequalities.

Impact assessment remains a major difficulty for the educational community. Warwick et al. (2004), note that there is no database providing an overview of “healthy schools” or their classification. The most effective strategy is to conduct internal assessments (performed by the school or by several schools with similar contextual characteristics) of the evolution of indicators with a view to identifying and measuring change in the targeted areas.

THE COMPREHENSIVE SCHOOL HEALTH PROGRAM IN THE UNITED STATES, CANADA AND HOLLAND

Network coordination

Also known as the Coordinated School Health Program (CSH), the purpose of this approach is to bring together local and federal projects and initiatives that usually form a largely uncoordinated patchwork of actions in the area of health education. The idea is to coordinate a range of integrated, planned, successive and school-affiliated strategies, activities and services in order to

To be accredited as a Healthy School, schools must comply with specific criteria in four interdependent and interrelated areas of health. The four areas are:
- personal and social training and health education, including sex education, interpersonal relationships and substance use;
- healthy eating;
- physical activity;
- emotional health and well-being.

promote students' physical, emotional, social and cognitive development. The program involves and supports families and is developed by the local community based on the needs, resources, norms and demands of the environment. The program is coordinated by a multidisciplinary team accountable for its quality and effectiveness to the community. (*Joint Consortium for School Health*).

- The program includes eight areas of intervention:
- health education;
- physical education;
- health services;
- nutrition services;
- psychological and counseling services;
- school environment;
- promotion of health staff;
- involvement of the family and the community.

This version of the comprehensive approach is based on four theoretical frameworks in which actions operate incrementally:
- teaching and learning;
- social and physical environments;
- health policies;
- collaborative projects and services.

The purpose of this network system coordinated by the CDC (*Centers for Disease Control and Prevention*), operating under the authority of the United States Department of Health and Human Services, is to improve academic performance while addressing the question of health in schools as part of an integrated approach.

For over sixty years, the CDC has advocated a policy of prevention and is committed, among other things, to implementing a health education curriculum from kindergarten to the end of compulsory schooling. The CDC developed the *Health Education Curriculum Analysis Tool* (HECAT), which provides teachers with a range of recommendations and strategies for facilitating the development and sustainability of health measures. HECAT provides instructions and learning sequences, in addition to modules on alcohol, drugs, healthy eating, mental health, well-being, physical activity, safety, sexuality, smoking and violence. The CDC also provides training workshops for teachers and managers.

How can the network be developed? How can the transition from theory to practice be made?

Deschesnes *et al.* (2003) found that the CSHP (Comprehensive School Health Program) has not been widely implemented, seemingly because of the gap between theory and practice. Initiatives at the micro level of the classroom, involving one or two teachers, are unlikely to be sustainable and effective. For example, in France, Denmark and Belgium, health professionals are "school-based", as are health-related measures. This approach presents the risk of isolating the school and is indicative of limited collaboration with external partners (Pommier, et al., 2010).

By contrast, evidence suggests that "integrated" interventions at a meta level (class, schools, families, external partners, financial and political support of the ministry, evaluation research, etc.) are more likely to be effective and sustainable. However, Deschesnes et al. qualified this view by noting that **the lack of evidence for successful implementations of the integrated method challenges the very foundations of these approaches**. However, there appear to be four incontrovertible conditions for successful implementation:
- measures must be integrated, planned and coordinated by the educational community as a whole;
- measures must reflect demand and intersectoral collaboration (school, family, community);
- measures must be funded by the decision-making authorities;
- measures must be scientifically evaluated and redefined accordingly.

*"However difficult an overall assessment may be, my feeling is that all these actions have an impact on school climate".*Pascal Touzanne, a headteacher in a collège (French middle school), discussing the "passeport santé" and the committee on health education and citizenship (issue n°407 of the journal La Santé de l'Homme, June 2010).

The IUHPE (International Union for Health Promotion and Education) is a global, multidisciplinary and multicultural professional network contributing to the development of health and the reduction of health inequalities. Its main areas of intervention include shaping the political agenda, developing the science of health promotion and increasing the capacity of individuals, organizations and countries to promote health (Lamarre, 2008)

IMPLEMENTATION PROCESSES

Changing and reforming schools needs to be seen as a multidimensional process involving school policy, pedagogical practices, the community and the public health authorities.

Comprehensive approaches include four cornerstones governing programs and the actions of educational teams:
- teaching and learning;
- the social and physical environment;
- health policies;
- partnerships.

The **implementation** of the Comprehensive Approach to School Health varies widely according to the targeted objectives, leadership, the demands of the curriculum, the socio-economic background of students and the context of the school (among other things). As such, there is limited scope for developing standard implementation procedures. Specific tools have been proposed by organizations and associations such as the Canadian Public Health Association and the Public Health Agency of Canada.

AREAS OF INTERVENTION

The main areas of intervention of comprehensive approaches are:
- mental health;
- drug-related health problems (tobacco, alcohol and illegal substances);
- health problems related to lack of physical activity and food (such as eating disorders, anorexia and bulimia).

Approaches focused on mental health problems appear to be most effective when implemented as part of a truly comprehensive vision, with particular attention given to the general environment of the school, the development of individual skills, the involvement of families and the continuity of the program over time. Research suggests that programs aimed at reducing violent behaviors and focused on conflict resolution are particularly effective. By contrast, approaches aimed at reducing suicidal behaviors or at developing self-esteem appear to have little long-term impact. Programs designed to implement healthy eating policies and to promote physical activity are also among the most effective strategies in the long term. The overview provided by Stewart-Brown (2006) indicates that programs aimed at preventing drug use are the least effective, although there is some evidence that drug use has declined among some young people and that the age of first drug use has increased.

Meta-level research suggests that changes in the environment contribute to improving health-related behaviors. Studies have found that some factors may have a significant impact on the development and implementation of measures, including strong leadership, government support and the involvement of teachers and other members of the educational community.

CONDITIONS FOR SUCCESSFUL IMPLEMENTATION

In a review of the literature on this subject published between 2000 and 2009, Simard and Deschesnes (2011) examined the results of recent assessments and identified the main issues and challenges raised by recent changes. The authors identified the major comprehensive approaches and defined the various areas of intervention in health promotion and education by showing that the conditions of implementation play a determining role.

Leadership

The results of several studies, and in particular the study conducted by Weiler *et al*. (2003) in Florida schools, clearly show that a recognized leader (generally the headteacher) who is aware of the different areas of intervention, who is respected by their peers and who demonstrates interpersonal skills and the ability to coordinate the comprehensive approach is generally able to motivate teachers and other members of the educational community to contribute to the creation of a healthy environment. A study conducted in Norway by Viig & Wolda (2005) also emphasized the ability of headteachers to bring together partnerships, to define objectives, to communicate important information and to integrate the professional development of teachers in the implementation process.

Professional development ●

Teachers are a key element for a successful implementation. Research has shown that teachers need to mobilize and develop skills related to the areas of intervention in which they are involved. According to Berger *et al*. *"the professional expertise that an education professional working for the Ministry of Education requires in order to provide health education needs to be seen as part of a permanent and dialectical movement between three poles: the act of educating, self-reflection and the content of professional knowledge"* (2010).

In a study of MindMatters, the comprehensive Australian program for mental health protection among secondary school students, Rowling (2009) emphasized the importance of adequate training for teachers, who may feel unable to address health issues in schools and to provide advice to students. Re-evaluating teaching methods by incorporating the concepts of the comprehensive approach appears to be vital in this respect. Education ministries have a responsibility to ensure that reforms and programs in this area can be feasibly implemented.

Planning

As a systematic yet flexible process, planning is a vital part of implementation processes. Planning is defined as any preliminary study aimed at identifying one or several relevant or initial areas of intervention.

Planning is key to ensuring that school structures are adapted to the activities developed as part of a comprehensive approach to health promotion and education. This is where the term "comprehensive" is most relevant since the aim is to integrate and even "saturate" school life with the objectives defined in the implemented approach (Inchley *et al*., 2006).

The 10 areas of intervention of a health promoting school as defined at the first conference of the ENHPS network are democracy and participation, equity and access, responsibilization, empowerment, the school environment, the curriculum, teacher training, assessment, collaboration, community, and sustainability.
(*First Conference of the European Network of Health Promoting Schools*, 1997).

See issue n°407 of the journal *La Santé de l'Homme: Éducation pour la santé à l'école: quelles compétences pour les professionnels?* (June 2010).

IMPACT ASSESSMENT

According to the criteria used by the United States Department of Education, effective programs are programs that can be assessed based on observed effectiveness (statistical measures, reliable indicators, impact assessment), program quality (clear objectives related to a change in behavior, detailed content and processes aligned with the objectives and target population), the impact on teaching (integration of the program into educational missions) and long-term usefulness (use in different contexts) (Cliffs & Jensen, 2005).

> Good indicators must be measurable, specific, realistic, valid and relevant, and may focus on processes and results or measure short-, medium- or long-term objectives (Désy, 2009).

Barnekow, *et al.* (2006) provided an overview of the different models used in member schools of the ENHPS and defined a set of objectives that may also be used as indicators in evaluating the success of health education programs.

Healthy school standards

There are three categories of healthy schools:

- level 1: the school is aware of the importance of participating in health programs and informs the educational community of its work in this area through bulletins or isolated events;
- level 2: the school has a long-term commitment to health programs and is involved in implementing initiatives, training courses and projects in partnership with local authorities or other partners;
- level 3: the school is fully committed to investing in training courses aimed at the educational community and to developing and implementing programs through a school project that includes action planning, target objectives and an assessment of the impact on behavior and academic performance.

Schools are assigned a rating based on an accreditation system in collaboration with local education partners and their counterparts in the health sector.

> A healthy school understands the importance of investing in the development of personal student initiatives aimed at improving student health and academic performance. It must take part in one or several local programs accredited by the ministry and be accountable for results based on specific criteria, related to a chosen theme, via an audit (NHSS Guidance, 1999).

One of the criticisms leveled by Barnekow et al. was the **difficulty of assessing the impact of standards and their implementation in the curriculum** insofar as they relate to schools. In their view, standards and assessments developed on a student basis are more reliable and more transferable indicators.

Data access

To assess the impact of implementing standards, Warwick et al. (2004) aanalyzed data from a wide range of sources, including the *Citizenship Education Longitudinal Study*, OFSTED reports, the *Survey of Smoking, Drinking and Drug Use* and the student database PLASC, which collects data on every student, including academic performance and the family environment. Other sources were also used, including questionnaires on

eating habits and sexual relations and contraception use. The data were combined and compared based on the level (1, 2 or 3) achieved by each school.

There were some significant findings. At primary level, the data showed that students in level 3 schools did not achieve better results in the core subjects compared to other students. In terms of changes in health behaviors (eating, violence, television, self-esteem), the study found no differences between schools at the different levels.

In secondary schools, there were noticeable differences in individual behavior. The study found that students in level 3 schools:

- were less likely to use drugs;
- were more likely to feel comfortable with a doctor;
- had higher self-esteem;
- were more likely to know how to get free contraception;
- were less likely to watch television for more than one hour after school;
- were more likely to improve their health behaviors;
- were more likely to improve their grade averages.

The report concluded that implementing standards has an extremely positive impact at secondary level, but that there is little or no impact at primary level. However, the analysis and survey conducted by Warwick et al. suggest a number of blind spots that were not taken into account in developing the indicators. These should be considered in future studies. They include:

For the school and senior management:

- the cleanliness of communal areas (restrooms, classes, sports fields);
- listening, availability and confidentiality (adults, specially trained students, health personnel);
- openness (educational partners, professional examples);
- nutrition (availability of fruit and vegetables, drinking fountains, choice of menus, information);
- safety (identifying and suppressing secluded areas conducive to violent behavior, supervision by an adult or "prefect");

For students:

- drugs (information rather than prohibition, smoking areas);
- spirit of camaraderie (among students, between younger and older students, between students and adults);
- recognition (rewarding student initiatives, motivating, supporting and listening to students).

Based on their results, the authors identified several potential areas of intervention by grouping different sets of indicators, including the reduction of health inequalities (sexual relations, drugs, eating habits), the promotion of social inclusion (self-esteem, behavior, disengagement, well-being) and improved academic performance. The NHSS report published in 2007 provided a basis for assessing the results of the Healthy School program in Britain (at national and local levels), for providing an overview of recent measures and for identifying necessary changes such as new schoolyards, the creation of school councils, the introduction of fresh produce in school meals and measures against violence and drug use. In terms of perception and experience, students generally felt that they had seen an improvement in their attitudes toward others, although parents and teachers sometimes complained that the measures taken in schools reflected other interests (i.e. the interests of external professionals).

In the book presenting the main results of the *Health Behaviour in School-aged Children* (HBSC) survey, it is interesting to note that the indicators used to illustrate health-related issues included the socio-economic status of families, family structure, peer relationships, the school environment, health and well-being, disabilities and chronic illnesses, oral hygiene, eating habits, physical activity and inactivity, self-image and weight, smoking, alcohol and illegal drugs, sexual relations and violence (Godeau *et al.*, 2008).

Do health promotion programs have an impact on academic performance?

As shown by recent research on educational effectiveness (Feyfant, 2011), the conditions favoring good health and academic success are often correlated. In a study on improvements to schools in disadvantaged areas, Muijs *et al*. (2004) emphasized the importance of contextual factors and teaching staff in improving academic performance. Murray *et al.* (2006) presented their findings on the correlation between health programs and academic performance in a review of the literature on the assessment of the comprehensive approach and its impact on academic performance. Based on conclusive data, their study showed that programs targeting asthmatic students and their families had a significant positive impact, while no negative effects were observed when an additional program of physical activity was introduced. The study also found that measures relating to healthy eating and mental health had a positive (if less pronounced) impact, although the study found no evidence that measures relating to the environment or teacher training had any positive impact. The authors bemoaned the lack of rigorous experiments in this area.

> *"The challenge is to convince policy makers that good health, in the broadest sense, is vital to academic success, and then to increase the ability of schools to implement health promotion programs based on research" (*Clift & Jensen, 2006).

Veugelers et Schwartz (2010) examined studies that have demonstrated the effectiveness of high-quality health education and the positive impact of favorable physical and social environments in promoting healthy lifestyles. There is less evidence of the impact on academic performance, although some reports have found that increasing the number of hours of physical education and reducing the amount of time spent in class does not have a negative impact on academic performance and can increase self-esteem, a key element for motivation and perseverance (Tremblay, Inman, Douglas, 2000, *Centers for Disease Control and Prevention*, 2010). A report by Ofsted on schools involved in NHSS programs found that 4/5 of primary schools and 50% of secondary schools were effective and that 2/3 of primary schools and 37% of secondary schools had improved (*National Healthy School Report*, 2002).

Dilley *et al*. (2009) reached similar conclusions. Their study found that improving just one of the factors with a negative impact on health appears to have a positive impact on academic performance. The integrated approach seems to be the most effective strategy. Rather than isolated measures, the authors showed that by proposing six key "ingredients" based on research and supported by the CDC, programs can play an important role in improving academic performance and well-being at school.

THE IMPACT OF IMPLEMENTATION: SOME INTERNATIONAL EXAMPLES

The advent of the *European Network of Health Promoting Schools* in 1992 was further reinforced by the international conference on « T*he Health Promoting School – an Investment in Education, Health and Democracy* » held in Greece in 1997. The findings of the conference have since informed the decisions of the network in terms **of implementation strategies, notably participation, assessment, empowerment and the democratization of access to health information** (Clift & Jensen, 2006). Since then, a wide range of projects have been developed as a result of the impulse given by the *Egmond Agenda* (1997) on education/health partnerships, practical measures requiring implementation and the ingredients of success. An overview of initiatives in this area is provided below.

HEALTHY EATING IN SCOTLAND

Inchley *et al*. (2006) examined the findings of an evaluation study of the benefits of a recent "healthy eating" program introduced in Scotland. The participating schools did not follow the pre-established protocols of the program but defined their own priorities based on their specific needs in collaboration with external partners. The study showed that **appropriation and empowerment** determine the success and sustainability of health-related measures. The assumption that projects should be "*school-based*" helps to bring together all members of the educational community. While student attitudes toward the benefits of healthy eating have changed and the composition of meals improved, there was little evidence of any radical changes in eating habits at an individual level. The other key factor is what the authors referred to as "**the agents of change**", i.e. the teachers and/or headteachers responsible for **project management. Intersectoral collaboration, participation** and **integration** were found to be the three parameters determining the success of an implementation project.

In implementing the HEAL (*Healthy Eating and Active Living*) program, the Scottish government aimed to tackle the causes of obesity among children in Scotland (34% of Scottish boys aged 2 to 15 and 31% of Scottish girls have a BMI ● above the recommended values) by proposing an action plan (2008) designed to improve eating habits throughout Scotland and to increase the level of physical activity. This initiative has been echoed in France through the EPODE childhood obesity program (Ensemble, Prévenons l'Obésité des Enfants), run by municipalities, sometimes in collaboration with primary school canteens.

> *"What is a healthy school? A healthy school is one that is successful in helping pupils to do their best and build on their achievements. It is committed to on-going improvement and development. It promotes physical and emotional health by providing accessible and relevant information and equipping pupils with the skills and attitudes to make informed decisions about their health."* (NHSS Guidance, 1999)

IBody mass index (BMI): Weight (in kilograms) divided by [height (in meters) X height (in meters)]. The different weight ranges are :
- below 18.5: underweight
- between 18.5 and 24.9: healthy weight
- between 25 and 29.9: overweight
- between 30 and 34.9: moderate obesity
- between 35 and 39.9: severe obesity
- over 40: morbid obesity

The body mass index is used to measure the risk of obesity (among other things). A healthy BMI is between 18.5 and 24.9. A person with a BMI above 30 is considered to be obese (Vulgaris Medical).

AN ASSESSMENT FRAMEWORK IN HONG KONG

Lee *et al*. (2007) examined the launch in 1998 of the Centre for Health Education and Health Promotion at the Chinese University of Hong Kong, accompanied by the creation of the "*The Hong Kong Health Education and Health Promotion Foundation*". The *Healthy School Award*, an assessment framework for Hong Kong schools, was created to collect and analyze student health data in "healthy schools". The most useful indicators relate to emotional problems, poor eating habits, lack of physical activity and risk behaviors. The assessment raises the issue of the lack of training and availability of senior management teams in the area of health promotion. Evidence suggests that the success of the Healthy School approach is primarily dependent on the ability of teachers and the educational team as a whole to develop and implement projects based around a common theme.

For example, a current project in Hong Kong shows how different assessments, focusing not only on the physiological and psychological state of students, but also on school climate and the policies implemented in schools, can be used to measure the process and impact of implementing the Healthy School approach (Lee, Cheng & St-Leger, 2005).

CREATING HEALTH-ENHANCING ENVIRONMENTS IN QUEBEC

A comparative study by Morin (2007) found that efforts to promote health in France have mostly been aimed at individual behaviors, while in Canada the focus tends to be on environments and network partnerships. The aim is to promote *"the creation of health-enhancing environments, i.e. actions on living environments and living conditions or on determinants of health that are not dependent on individual decisions to adopt a given behavior".* The idea of community is key here since the approach requires strong social cohesion and collective *"empowerment"*

This approach generally requires public policies that promote health as a core value in areas such as urbanization, transport, and nutrition, family and cultural policies. In 2010 , *the Canadian Journal of Public Health* published a special issue on environments conducive to learning by bringing together papers on the comprehensive approach from the perspective of healthy eating and increased physical activity.

MENTAL HEALTH IN GERMANY AND SWITZERLAND

A number of principles were established at the first European Conference on Health Promotion and Education. These principles were later reinforced by the *Egmond Agenda* in 1997 and were based on a social model of health focused on the individual but also on the environment in which the individual operates. The *MindMatters* program was adapted to the needs of Swiss and German communities and launched in the autumn of 2002. The idea was to create a bank of resources and guidelines for teachers on factors impacting students' mental health, such as stress, violence, harassment and suicide. The aim was also to provide information on potential external partnerships and on how to integrate this information into the curriculum. Each participating school was required to train a team (which may include students) with a view to performing a questionnaire-based audit on the environment, followed by an assessment of available resources. As part of this pilot project, data were collected from the responses of over 400 teachers and over 2,200 students, in addition to interviews with teaching staff. The resources, supplemented by the necessary changes in terms of information and, in some cases, content, are due to be officially integrated into the curriculum (Franze, 2005).

A current project in Hong Kong shows how different assessments – relating not only to students' physiological and psychological health, but also the school climate and the policies implemented in the school – can be used to measure the process and impact of implementing the Healthy School approach (Lee, Cheng & St-Leger, 2005).

Collective empowerment: capacity of communities to make decisions and to take measures promoting collective well-being (Morin, 2007)

See also Jensen Bjarne & Simovska Venka (eds.) (2002), *Models of Health Promoting Schools in Europe*, a volume aimed at demonstrating the diversity of approaches and methods used to construct, reconstruct and deconstruct actions in a health promoting school in different educational and cultural settings. The dynamic interaction between political, social, economic and other dimensions determines the priorities and methods of implementation. The idea is that it is neither possible nor desirable to develop a unique health promoting school model. A healthy school is more a matter of contextual interpretation than the result of the implementation of international principles.

THE FIGHT AGAINST OBESITY IN MASSACHUSETTS

How can a health program be integrated into American secondary education? This was the question posed by Wiecha et al. in their assessment of the *"Planet Health"* program aimed at reducing childhood obesity (2004). *"Planet Health"* has four objectives: to increase physical activity, to reduce the amount of time spent watching television, to improve eating habits by increasing the consumption of fruit and vegetables and to reduce fat intake. These objectives were integrated into the curriculum (in arts, mathematics, sciences, social sciences and economics) of six pilot middle schools in Massachusetts over a period of three academic years. Six measurement tools developed using the Diffusion of Innovations Theory ● were used to identify the conditions of feasibility and sustainability, while questionnaires were used to assess the impact of the program. The results showed that there is scope for introducing a viable participatory program beyond the experiment. The process of diffusion requires careful planning in order to encourage the target group to adopt new behaviors aimed at improving their health or preventing risks.

● Rogers's Diffusion of Innovations Theory Based on the premise that there is a gap between health knowledge (particularly evidence-based knowledge) and practice, the Diffusion of Innovations Theory, originally developed by Everett Rogers, is based on models of diffusion and active (i.e. planned, formalized and centralized) dissemination (Gaussel, 2011).

CONCLUSION: DEMOCRACY AND PARTICIPATION – THE PROSPECTS FOR HEALTHY SCHOOLS

In a study of health indicators, Barnekow *et al.* (2006) emphasized the paradigm shift from the traditional conception of health education based on illness, medicine and behaviors toward a new approach focused on living conditions, well-being, the absence of disease and prevention and aimed at encouraging students to "exercise more control over their health and their environment" (Ottawa Charter, 1986). In practice, this means that the educational community must **encourage students to participate in defining concepts such as healthy environments and healthy behaviors** and in creating their own frames of reference and rules of behavior. The notions of autonomy and empowerment referred to in the Ottawa Charter are two of the key elements of the ecological model consistent with a conceptual model of well-being at school.

> *"The ecological model is based on the idea that different actors – individuals, communities, organizations – must take an active part in activities that have the potential to improve the health of the targeted population"* (Désy, 2009).

In their study of well-being at school, Konu & Rimpelä (2002) took a broader approach to health and health promotion, basing their conceptual model on a sociological and theoretical foundation. In their view, well-being at school is not only a key element of health promotion, but is above all one of the main foundations required to ensure effective and high-quality teaching and to implement measures for promoting health in schools. Konu & Rimpelä defined a model of well-being based on Allardt's theory and its "dimensions of welfare", divided into four categories:

- school conditions (having): the physical environment at and around school, safety, food, class size;
- social relationships (loving): student-teacher relationships, relationships between students, parent-teacher relationships, school climate, violence;
- personal development (being): respect, self-esteem, skill improvement, positive experiences;
- health status (living): absence of disease.

Presented from the point of view of students, the four categories should serve as indicators for assessing schools, including health and safety conditions. Accor-

ding to Flecha *et al.* (2011), there is strong evidence to support efforts to reduce inequalities between students by promoting health literacy in schools. The results of their study indicate that schools can play a key role in reducing inequalities.

HEALTH LITERACY: A NEW SKILL?

These strategies can be adapted to the context in which they are implemented. Three areas of intervention are common to all four strategies: the formal and informal health curriculum, the school environment and the links between the school, the family and the community. The comprehensive approach promotes the idea of health literacy, i.e. the ability to obtain, interpret and understand the basics of health information and health services and the skills required to use them. Health literacy is one of the key objectives of the National Health Education Standards (NHES), as defined by the American Cancer Society (Gaussel, 2011).

> The four characteristics of health competence are: a capacity for critical thinking and problem-solving, being a responsible and productive citizen, learning autonomously and communicating effectively. (WHO, 2004).

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