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# EDUCATION AND HEALTH: A NECESSARY CONNECTION

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**Abstract:** Within the context of discussions regarding education and health, it is necessary to consider a potential relationship between these sectors, respecting the experiences and knowledge of the stakeholders involved; that is, not limiting the work of health or education, but rather fostering a dialogue between the two to integrate their respective bodies of knowledge. This study aims to expand research on the importance of health and prevention in schools, given the need for both sectors to contribute to fostering collective well-being and promoting access to knowledge. For data collection, a literature review was conducted on the proposed topic, involving the analysis of scientific articles and books, as well as official documents from the Ministries of Education and Health. The results point to the understanding that health and education cannot be separated, as they form an integrated context that is constantly put into practice—from educational activities addressing healthy eating, vaccination, sexuality, or other health aspects, to a broad understanding of society and a sense of community that is closely linked to health.

**Keywords:** Education. Health. Prevention. Public Policies.

## INTRODUCTION

Considering the integration of practices in the fields of health and education allows for a historical reinterpretation of the relationship between health and school. Historically, health and education have experienced periods of convergence and divergence, alignment and misalignment, with regard to the fulfillment of their missions and their social roles. The different historical contexts, as well as the way in which

various actors engage with and shape these contexts, have been significant in shaping these dynamics.

In this scenario, it is necessary to consider a possible relationship between health and education, respecting the experiences and knowledge of the actors involved—that is, not limiting the work of health or education, but rather promoting a dialogue between these two sectors to articulate their respective bodies of knowledge. The school is a living space where historical and social relationships and experiences are established; therefore, it is a space for debate and the articulation of aspects inherent to health. One cannot disregard the richness of the educational space for work on individual and collective health.

Health, then, is viewed through a multidimensional lens, considering physical, emotional, social, professional, intellectual, and spiritual aspects, all of which influence and are interconnected. Furthermore, health must take into account social, cultural, and economic aspects, focusing on both individual and community well-being.

It is thus observed that schools play an important role in health promotion, given that, through education, it is possible to develop a sense of community and individual care. It is in school that knowledge is consolidated and made accessible to all, broadening students' perspectives on various subjects. Given the above, this study aims to expand research on the importance of health and prevention in schools, given the need for both sectors to contribute to fostering collective well-being and promoting access to knowledge.

## A REFLECTION ON EDUCATION AND HEALTH

Schools transform the concepts of education and health into a vision of Health Education; in other words, they cease to be two separate concepts and become a single purpose, an ideal. In school, students learn everything from simple practices that help promote and prevent illness—such as washing their hands before meals—to broader concepts like viral infections, sex education, and public health, for example.

To better understand this relationship, a broad perspective on the concepts of health and education is needed. Copetti, Soares, and Folmer (2018) address this discussion, drawing on the concept of health proposed by the World Health Organization in 1948: “a state of complete physical, mental, social, and spiritual well-being, and not merely the absence of disease or infirmity.” A definition that is still debated today because it is seen as a utopian conception, given that a state of the highest level of well-being is, at the very least, subjective, as it refers to people who possess their own uniqueness and individuality. “When discussing health, it is essential to consider the factors that influence this concept, such as: the environment, biological, socioeconomic, cultural, emotional, and psychological aspects” (COPETTI; SOARES; FOLMER, 2018, p. 11).

From a neuroscientific perspective, the relationship between education and health can be understood through an analysis of the neurobiological and genomic impacts that education exerts on health, at both the individual and collective levels. From a neurobiological perspective, education plays a crucial role in modulating brain circuits involved in emotional regulation, stress resilience, and cognitive development. Studies indicate that continuous learning and a stimulating educational environment can lead to changes in synaptic plasticity, particularly in the hippocampus and prefrontal cortex, regions critical for memory and decision-making. These neuroplastic changes are mediated by neurotrophic factors, such as BDNF (brain-derived neurotrophic factor), which has been associated with improved mental health and a reduced risk of neuropsychiatric disorders (Yang et al., 2022).

In the field of genomics, the interaction between genes and the educational environment has been shown to have significant influences on gene expression and epigenetics, contributing to our understanding of how education can modulate susceptibility to various health conditions. For example, exposure to an enriched educational environment has been shown to have epigenetic effects on the expression of genes associated with inflammation and metabolism, potentially reducing the risk of chronic diseases such as diabetes and cardiovascular disease (Smith et al., 2023). Neurotransmitters such as serotonin and dopamine, which are essential for regulating mood and motivation, are also influenced by educational level, directly impacting mental health. The regulation of these neurotransmitters is modulated by genetic and epigenetic pathways, suggesting that education not only promo-

tes psychological well-being but also exerts lasting effects on the brain's molecular architecture ( ) (Gonzalez et al., 2021).

When it comes to education, it is important to view education as a comprehensive process aimed at the development of the individual across multiple dimensions. This process involves not only the acquisition of scientific and technical knowledge but also the development of critical, ethical, and social skills. Education must empower individuals to face contemporary challenges, enabling them to actively participate in society and apply knowledge in practical and technological contexts. In this way, education becomes a means for full human development, contributing to the construction of a more just and equitable society.

In Brazil, these fields must be considered broadly, as advocated by movements in the health and education sectors and, consequently, by the guidelines that define the respective public actions and policies. It is the practices of Health and Education, in conjunction, that drive actions related to the care of users of the Unified Health System (SUS), the treatment of diseases, and practices of health surveillance, popular education, and health training—that is, they involve different actors and form the foundation of the process (Darsie et al., 2022).

It is therefore important to consider how schools relate to health in practice. In this regard, Pimont (2023) explains that health manifests itself both individually and collectively, and for this reason, it is up to schools to work toward certain goals, operating not only from a perspective of education and health, but of health education. According to the author, it is necessary to help individuals develop self-awareness, an

awareness of the environment in which they live, and of the relationships they establish.

The main objectives of health education would be: 1) Awareness of the right to health, within the level of development of the social group in which the individual lives; 2) Knowledge about health; 3) Knowledge of the health services available to the community and their subsequent use; 4) Knowledge and use of health practices (Pimont, 2023).

“Proposals for teaching and learning about health in schools are closely linked to teachers’ understandings of what constitutes Health Education and health promotion in schools” (Schwingel; Araújo, 2021, p. 479). Resende and Dantas (2009) explain that viewing education as an emancipatory process enables numerous dialogues and insights that highlight health from a broader perspective, addressing territorial issues and intersectoral and interdisciplinary work processes aimed at integrating the health and education sectors. “Health and education policies have been building bridges, which have produced experiences that reflect significant encounters in both fields” (Resende; Dantas, 2009, p. 07). That said, beyond viewing health solely in relation to the absence of disease or even from an entirely medical perspective, it is important to consider health and education in all their complexity, broadening our view beyond mere medicalization to include social, cultural, spiritual, and pedagogical dimensions as well.

## HISTORICAL CONTEXT OF THE HEALTH IN SCHOOLS PROGRAM

Based on the principle of comprehensive healthcare, the role of healthcare professionals cannot be limited solely to curative care, but must also be considered within the context of health promotion and prevention. In this sense, it is important to view health education as a responsibility of professionals, permeating all levels, from prevention to recovery and treatment (SOUZA and JACOBINA, 2009).

Thus, the history of health in Brazil and the trajectory of health education must be considered to understand how this process unfolds today. In this context, it is worth noting that the need to implement national policies to promote continuing health education has accompanied the historical periods experienced by the health sector in the country.

The search for school health care policies has its roots in the late eighteenth and early twentieth centuries, when a German physician named Johann Peter Frank (1745–1821) organized a system known as the Frank system, published in 1779 in nine volumes, two of which were published posthumously. This work was a milestone regarding the social relations of health and disease, as this system addressed not only school health but also various aspects of public and industrial health (FIGUEREDO et al., 2010).

This system addresses school healthcare and the supervision of educational institutions regarding accident prevention, mental hygiene, and other factors. All of this was organized through athletics programs, classroom ventilation, heating, and lighting. (SILVA, 2015).

In the mid-1950s in Brazil, there was a Ministry of Education and Health (MES), which later split into two: the Ministry of Health and the Ministry of Education and Culture, each gaining institutional autonomy to develop public policies in their respective areas. Thus, until the 2000s, various approaches sought to focus the school environment on a health-centered premise, pursuing initiatives aimed at hygiene care, first aid, and medical and dental assistance (GOMES JUNIOR and RAMOS, 2021).

Carvalho (2015) highlights that in Brazil, school-based health initiatives began to appear in public discourse as early as 1889, with the focus being on behaviors and habits considered healthy. Initially, based on hygienist discourse, health education aimed to develop a healthy and productive population, achieving this through strict control over childhood. Thus, due to the strong traditionalism in schools, health policies and programs addressed health in schools with the goal of universalizing the education system, making behavior modification their primary objective.

Hygienist discourses aimed to modify the behavior of the Brazilian population. For this reason, doctors of this period were responsible for caring for the health and hygiene of the people and the country, as they held the view that most diseases were linked to sanitary issues (FERNANDES and OLIVEIRA, 2023). From this perspective, the hygienist period was focused exclusively on epidemic control and health surveillance.

Many hygienists also attributed the country's backwardness relative to Europe to the lack of health and education among the people. However, they denied that the problems were intrinsically linked to the lack of health conditions and sanitary facilities for people living in situations of extreme poverty.

Health education in Brazil was thus initially established as “sanitary education,” given the need to control epidemics and infections that threatened society in the 20th century. To address these problems, repressive interventions targeting social and individual bodies were necessary; thus, through imposed and coercive measures, health campaigns were launched to combat epidemics and endemic diseases, most of which were linked to the precarious sanitation conditions of the time (BARRETO, 2020).

Based on this premise, it is important to note that while the bourgeoisie was concerned with following hygienist ideas, the working classes neither cultivated nor protected the body, as they did not view life as a value nor the body as having the need to be clean. Meanwhile, bourgeois ideas became normalized and universalized, with education and health focused on disciplining the proletarian classes (GOIS JUNIOR et al 2012).

Health entered the school to establish a way of behaving, of “living one’s life,” based on the regulation of bodies through the biological and/or psychological medicalization of failures in the teaching-learning process. However, this was not and is not the only option for addressing the intersection of education and health; on the contrary, in response to educators and public health professionals, other ways of understanding the close link between knowledge production and healthy living have emerged, which focus on the

expanded concept of health, on comprehensiveness, and on the development of citizenship and autonomy. (GOMES JUNIOR and RAMOS, 2021, p. 08).

Silva (2015) shows that schools have shifted their scope of action, particularly regarding mission, organization, and social function, thereby becoming a privileged setting for developing critical thinking, values, worldview, and political awareness. Thus, it is emphasized that schools can directly influence how individuals approach health.

Since 1995, the Pan American Health Organization (PAHO) has encouraged countries in Latin America and the Caribbean to prioritize health in schools, seeking to establish health-promoting schools based on the needs and challenges of each region. The goal is to create a school environment that integrates three components: “1) Comprehensive health education, including the development of life skills; 2) The creation and maintenance of healthy physical and psychosocial environments; and 3) The provision of health services, healthy nutrition, and active lifestyles.” (FIGUEREDO et al., 2010, p. 399)

For this reason, on December 5, 2007, Decree 6286 established the School Health Program, which is focused on school health and designed to adhere to the principles and guidelines of the Unified Health System (SUS), namely comprehensiveness, equity, universality, decentralization, and social participation (CARVALHO, 2015).

Since then, the PSE has been consolidating to encompass the concept of collaboration between health and education. To this end, ordinances were created to ensure the

program received funding and to establish a collective organization that aligns with the SUS's mission—which, contrary to popular belief, is not limited to medical care, exams, and surgeries. The SUS is everywhere, and its mission goes beyond medicalization (GOMES JUNIOR and RAMOS, 2021).

In this sense, the SUS is a project that embraces and enshrines the principles of Universality, Equity, and Comprehensiveness in healthcare for the Brazilian population. This implies conceiving, as the “target vision” of a reform process for the health system “inherited” from the previous period, a “health system” capable of guaranteeing the population's universal access to goods and services that ensure their health and well-being, in an equitable and comprehensive manner (TEIXEIRA, 2011)

Thus, the principles governing the SUS are highlighted, with universality aiming to extend service coverage to make it accessible to the entire population; the principle of equity refers to the need to treat unequal groups unequally, providing opportunities for survival, social, and personal development among members of each society; and the principle of comprehensiveness, which is a way of providing comprehensive care within the health sector (TEIXEIRA, 2011).

The principle of decentralized management, meanwhile, relates to the redefinition of functions and responsibilities at each level of government; the principle of regio-

nalization refers to the delimitation of a territorial base for health services; the hierarchy of services, in turn, concerns the possibility of organizing units according to the degree of technological complexity of the services; finally, integration aims to establish a profile of actions and services offered by the system that encompasses the various intervention alternatives for health problems (TEIXEIRA, 2011).

Thus, the Health in Schools Program is part of citizenship education, bringing together students, parents, the school community, and society at large by addressing health and education in a comprehensive manner. It is thus based on shared management by the Health and Education departments and other partners representing social policies that plan actions to be carried out collectively; the aim is to promote intersectorality within the SUS and work using an interdisciplinary approach within the school. (SILVA, 2015).

The partnership between education and health develops training frameworks and didactic-pedagogical materials that meet the needs for implementing the following actions: - Planning, monitoring, and evaluation of the PSE, in which the target audience consists of health and education professionals who make up the Intersectoral Working Groups (GTIs); - Assessment of health conditions, health promotion, and prevention of health risks and diseases, where the target audience consists of Family Health Team professionals,

health facility staff, school professionals, and young students (BRASIL, 2011, p. 18).

With the school's growth in mind, regarding the quality of implementing any initiative, it is necessary for professionals to have opportunities for discussion and study to exchange experiences and learn more about the socio-historical and health aspects related to schools and the needs of their students, so that they may understand the difficulties and seek ways to overcome them.

## **PUBLIC POLICIES ON EDUCATION AND HEALTH**

Given that Brazil's public health system has been built amid serious challenges related to implementation, development, distribution, and service delivery, it is necessary to identify the existing gaps in the SUS in order to address them through effective strategies that help improve this service. Resolving these problems does not always involve educational activities for health professionals; however, efforts focused on the professional development of health workers are essential for improving the quality of care (CARDOSO, 2012).

Regarding such public policies, the school health program stands out as a means of bringing together two major forces—health and education—which together effectively contribute to combating the vulnerabilities that compromise the quality of life of school-age children and youth, since “the school is a privileged space for health promotion and the prevention of health conditions and diseases.” (BRASIL, 2011, p. 05).

In this context, the PSE should also be considered for the training of educators. The program manual itself establishes partnerships between schools and health professionals, emphasizing the need for health professionals to use support materials and strategies to work within schools alongside educators (BRAZIL, 2009).

Among the actions of the team as a whole, the following are worth highlighting: Planning and evaluating actions to be developed in the school environment through periodic team meetings; Coordinating local social actors (schools, agricultural producers, businesses) with a view to integrating school health; Learning about and encouraging the production and consumption of healthy, regionally produced foods; Promoting intersectoral coordination to enable the cultivation of school gardens and/or community gardens; Promoting guidance on the use of nutritional labeling (composition and caloric value) as a tool for food selection (BRAZIL, 2009, p. 63).

The document suggests specific roles for health professionals such as doctors, nurses, and dentists to participate in initiatives aimed at nutritional assessment in schools and promoting healthy eating for the entire school community, disseminating educational materials on common health issues, as well as identifying cases of health risks by working collaboratively to promote health education in schools. (BRAZIL, 2009).

Nursing assistants can also encourage community participation with a view to improving the quality of life in the school community. Community health agents, on the other hand, can encourage participation and raise awareness throughout the school community by actively engaging with the school to promote initiatives and monitor the realities of students and the situation of school staff. Additionally, the NASF team can develop joint therapeutic intervention plans with professionals from family health teams (BRAZIL, 2009).

It is essential that the Departments of Education and Health work together to ensure the program is implemented and put into practice through both specific actions by health professionals and teaching practices. The work must therefore be carried out through cooperation between health and education to facilitate meaningful learning.

“Health and education, as social constructs, require everyone’s participation; therefore, PSE managers are organized at the national level by the Intersectoral Commission on Education and Health in Schools (CIESE), which is tasked with establishing guidelines for education and health policy” (BARRETO, 2020, p. 27).

This coordination takes place through Intersectoral Working Groups (GTIs). At the municipal, state, and Federal District levels, coordination occurs through Intersectoral Working Groups (GTIs), with activities carried out collectively from planning through implementation. Thus, it must not be forgotten that the program’s objective is not to transform schools into an extension of health clinics, but rather to expand civic education in the health sphere. (GOMES JUNIOR and RAMOS, 2021).

As can be seen, there is no way to separate health and education; it is an integrated context that is constantly put into practice, ranging from educational activities addressing healthy eating, vaccination, sexuality, or other health aspects, to a broad understanding of society and a sense of community that is closely linked to health. As Foucault (1977) states, “The problem is not to change people’s ‘consciousness,’ or what is in their heads, but the political, economic, and institutional regime of truth production.”

## FINAL CONSIDERATIONS

In the context of the final considerations of this research, it was possible to understand the importance of integrating practices in the fields of health and education, without losing sight of respect for the experiences and knowledge of all those involved. Not limiting the work of health or education undoubtedly promotes a dialogue between these two sectors, a fact that results in the articulation of knowledge.

Education and health are broad concepts, and for this reason, it is essential to recognize that health education must be considered as one of the aspects of the overall educational process, of which it is a part; although it has specific objectives, it is by no means disconnected from it, nor does it constitute a separate department.

Because it plays an important role in health promotion, the school contributes significantly to the development of a sense of community and individual care, as it is in this space that knowledge is consolidated. Given the above, it is worth considering the scope of this study’s objective, as we understand that health and prevention in schools contribute to fostering collective well-being and promoting access to knowledge.

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