



International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531
(Print & Online)

<http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>



Assessment of School Physical Environment in Gizan Primary Schools

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Abstract

This descriptive study was conducted in Gizan primary school to assess the school physical environment and the factors related to the environmental problems in schools. A total coverage of primary schools was used as a unit of study. (due to small number of primary schools in Gizan (23 schools)). A questionnaire was designed for gathering data from the school managers or teachers included four sections: First, physical parameters as ventilation, lighting, number of students/classes..etc. Nutrition information. Sanitary measures. and Medical and health services. The study showed that there was some environmental problems in some schools for instance, waste disposal program management, the invalid medical cards of food handlers, the availability of some insects that may act as a vector of disease, lack of health educators in schools,....etc. but fortunately all these problems was controllable, and some of which (availability of insects and waste disposal programs) had no statistical significant when correlated with asthma and allergens (p value >0.05). This study was carried out during the period from January to August 2013 in Gizan city. The authors in this study did not visit female schools because of the social constraints during the field work; then the author only depend on the Questionnaire as a tool for data Gathering.

Keywords: school health; physical environment; ventilation; sanitation; insects

1. Introduction

The school should be a suitable space for intellectual, creative, physical and social activity.

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The school should be lively and welcoming, a place that the pupils will make their own with an atmosphere and sense of scale that is not over-powering or impersonal [6]. The need is for a building that can accommodate that variety of activities, a school that will stimulate experiment will support and encourage interest in the pupils must be to provide the quality and character of environment appropriate to the educational aims of the school.

“The children of today are the adults of tomorrow. They deserve to inherit a safer and healthier world. There is no task more important than safeguarding their environment.” This message is emphasized by the Healthy Environments for Children Alliance (HECA) [1].

Environmental challenges and opportunities vary considerably among schools around the world, across countries and within communities. Similarly, the resources available to schools to manage health hazards vary as widely as the threats themselves, often creating formidable management challenges, particularly in the poorest parts of the world [2].

Evolving from recommendations of the Ottawa Charter for Health Promotion, *The Physical School Environment: An Essential Component of a Health-Promoting School* discusses a range of environmental conditions that exist in a variety of school environments. It presents strategies to improve the health, education and development of children, families, and community members and aims to help communities recognize, manage, and avoid physical, chemical and biological threats that may exist in or near their schools [1].

WHO defines a health-promoting school as “one that constantly strengthens its capacity as a healthy setting for living, learning and working.”

1.1. What is School Health Education?

With the myriads of powerful theories and ideas surrounding the words school, health, and education; it is imperative first to define school health education, its targets and general practice. The definition of school health education has evolved much throughout the 21st century. In general, it is regarded as classroom teaching on the subject of health/hygiene in a k-12 setting. The major trend regarding changing definitions of school health education surrounds the ever increasing notion that school education influences adult behavior. In the 70's health education was viewed mostly as a means of communicating healthy medical practices to those who should be practicing them; “Health education attempts to close the gap between what is known about optimum health practice and that which is actually practiced [8] In the 80's definitions began to incorporate the understanding that education is a means of empowerment for the individual, allowing the individual to make educated health decisions. Health education then became “the process of assisting individuals... to make informed decisions about matters affecting their personal health and the health of others [9]. This definition also spawned during the year of the first national-scale investigation of health education in schools, which eventually led to a much more aggressive approach to educating the nation's youth on matters of health. Today school health education is seen as a ‘comprehensive health curricula.’ It is a blend of community, schools, and patient care practice; “Health education covers the continuum from disease prevention and promotion of optimal health to the detection of illness to treatment, rehabilitation, and long-term care [10]. This concept is

recently prescribed in current scientific literature as ‘health promotion’, a phrase that is used interchangeably with health education.

1.2. Impact of physical environment on students achievement

The American Academy of Pediatrics defines a “healthful school environment” as “one that protects students and staff against immediate injury or disease and promotes prevention activities and attitudes against known risk factors that might lead to future disease or disability [3].

Air and water quality; the presence or absence of physical, biological, and chemical agents; and general maintenance and upkeep all contribute to the experience of the school as a place for living and learning. In addition, researchers have found that crowding, noise, temperature, humidity, and other environmental factors can affect the health and academic performance of students and staff [7].

1.3. Study methods and materials

A descriptive study was used as a type of study to achieve the objectives. The objective of such study was to assess the school physical environment in Gizan primary schools.

all primary schools in Gizan city had been chosen as units of study. direct interview with teachers , observations and questionnaire was applied as a tools for data gathering. Due to the small number (23 schools), a total coverage of primary schools was used as a unit of study.

2. Results

Figure 1 examines the number of students per class at Gizan primary schools, in both public and private institutions Class sizes have been calculated by dividing the number of students enrolled by the number of classes. In about 80% of the schools the numbers of students were found to be less than 30.

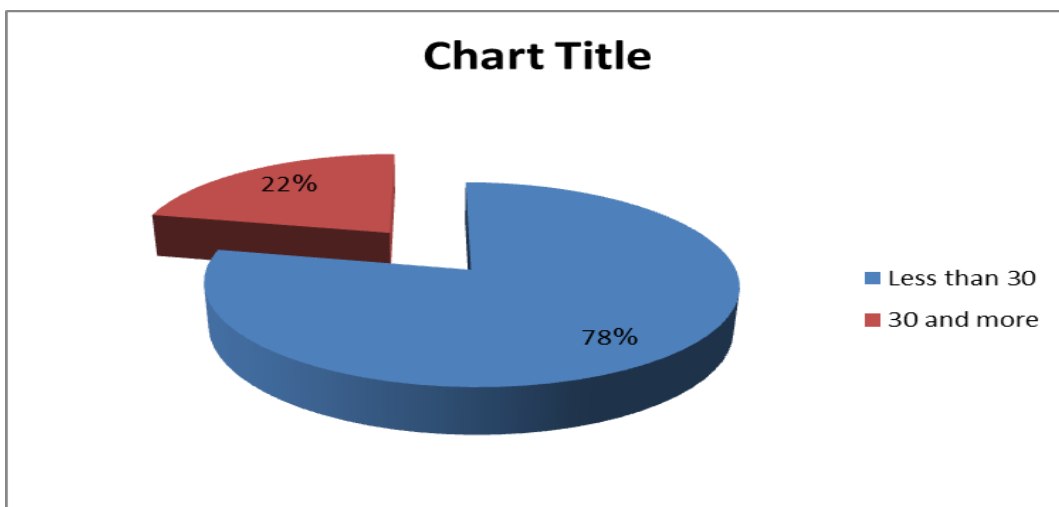


Figure (1): Number of students per class in Gizan primary schools (n=23).

figure (2) shows that 86.9% of the schools have good opening space for natural ventilation and lights.

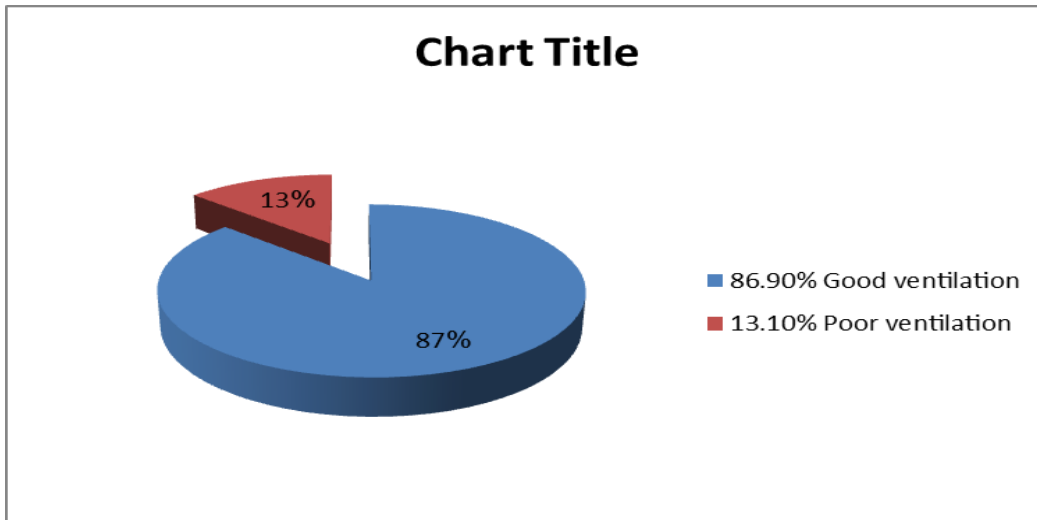


Figure (2): Natural Ventilation based on wind direction of building construction of Gizan primary schools (n=23)

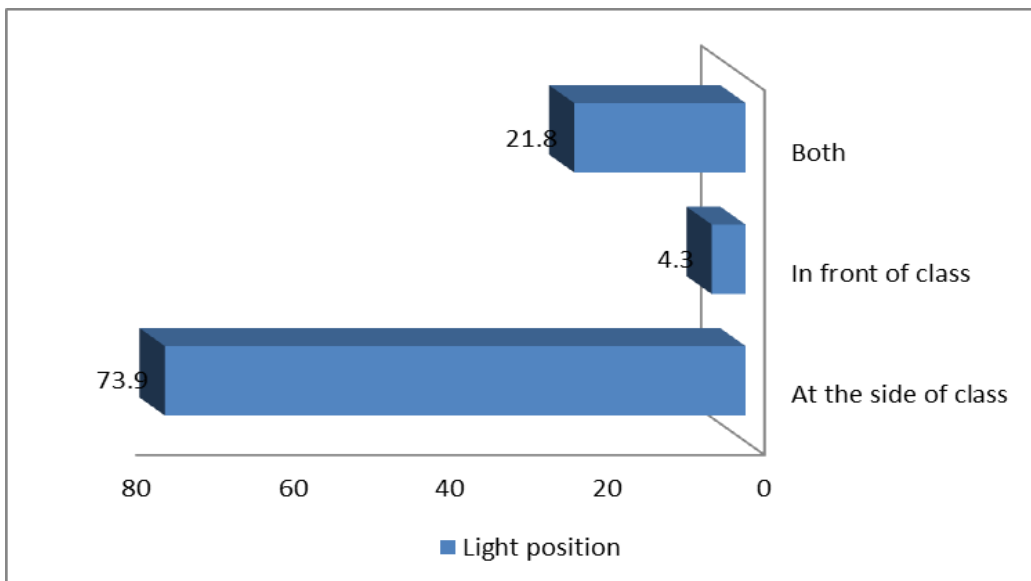


Figure (3): Light position in classes of Gizan primary schools

Light position in classes:

The geometry and distribution of glazed areas should be carefully designed to provide a high level of natural light while avoiding glare. All teaching areas and habitable rooms should have a view of the outside environment. On the other hand, the artificial lighting should be located at the side of classes to prevent glare.

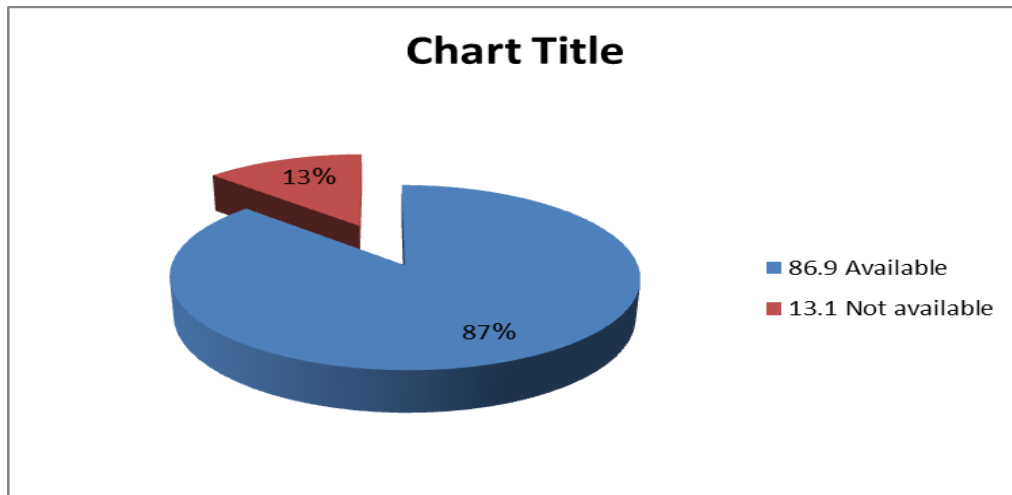


Figure (4): Availability of fire fighting in primary schools of Gizan

Table (1): Sanitation Services in Gizan primary schools

	Waste disposal at schools		Number of toilets per students		source of students meals		
	Regular	Irregular	Sufficient	Not sufficient	Home	Caffeteria	Street Venders
Frequency	21	2	22	1	18	5	0
Percentage	(91.3%)	(8.7%)	95.7	4.3	78	22	0

Waste disposal in Gizan Primary schools. Number of toilets per students in Gizan primary schools. source of students meals.

Table (2) Type of insects found at primary schools in Gizan

Type of insects	Frequency	Percentage(%)
Mosquitoes	1	11.2
House fly	3	33.3
Cochroach	5	55.5
Total	9	100

Table 2 showed that there are some types of insects found in gizan primary schools.

Table (3) Medical cards for food Handlers in Gizan primary schools.

Medical card	Frequency	Percentage(%)
Valid medical card	13	56.5
Invalid medical card	7	30.4
Did not have M.C	3	13.1
Total	23	100

The above table showed that , some food handlers those who serve students had a valid medical card(56.5) ,(30.4%)had invalid M.C, while the rest(13.1%)of them did not have a medical card.

Table (4) Presence of clinic & professional health educator at primary schools of Gizan

Presence of Health Services	Clinic		Professional health educator	
	No.	%	No.	%
Yes	1	4.3	0	0
NO	22	95.7	23	23
Total	23	100	23	23

The table indicate that there was no professional health educator in all schools, the clinic was only found in one school(4.3%)

Table (5): Asthma or allergy among students of Gizan primary schools.

	Asthma or allergy	Time	
		Before enrollment in the school	After enrollment
Yes	6(26%)	4(66.6%)	2(33.4%)
No	17(74%)	None	None
Total	23	4	2

3. Discussion

In more than two quarters of the schools the numbers of students were found to be less than 30 as in figure (1). While smaller classes are often perceived as enabling a higher quality of education, evidence on the impact of class size on student performance is mixed.

The number of students in a class has the potential to affect how much is learned in a number of different ways. For example, it could affect how students interact with each other—the level of social engagement. This may result, for example, in more or less noise and disruptive behavior, which in turn affect the kinds of activities the teacher is able to promote. It could affect how much time the teacher is able to focus on individual students and

their specific needs rather than on the group as a whole. For these reasons, changes to the class size are considered a potential means of changing how much students learn (this finding is in the stream with what was mentioned by [4]).

According to the classroom design guide for Emory College (2008) students preferred classes of 10-20 students, and instructors suggested that the ideal class would have 19 students. Instructors reported that at 39 students problems began to arise, and that a class of 51 students was impossible, thus the class environment may affect the students behavior [5]. They also reported that an uncomfortably small class begins at 7 students, and an impossibly small class has 4 or less. The issue continues to be debated, informed by a broad set of parameters from budgets and availability of physical space and instructors to the methods of instruction used in the classroom. An upper limit that is often suggested as a reasonable compromise is 25 students.

Although most of the schools were found to have enough opening sections for good ventilation but about 13% of them suffering from poor natural ventilation and were dominated by mechanical ventilation and air conditioning as figure (2) explained. Ventilation wherever possible should be natural ventilation by means of permanent ventilation and windows with opening sections. Natural ventilation in buildings relies on wind and thermal buoyancy as driving forces.

The driving pressures derived from wind and thermal buoyancy are low compared to those produced by fans in mechanical ventilation systems. It is therefore necessary to minimize the resistance in the airflow path through the building.

The use of mechanical heating and cooling in combination with natural ventilation, as a hybrid or mixed mode system, can extend the acceptable climate conditions where natural ventilation can be effectively applied to utilize free cooling for a large portion of the year.

4. Conclusion:

By the end of this study it was found that, there was some environmental problems in some schools for instance, waste disposal program management, the invalid medical cards of food handlers, the availability of some insects that may act as a vector of disease, lack of health educators in schools,....etc. but fortunately all these problems was controllable, and some of which (availability of insects and waste disposal programs) had no statistical significant when correlated with asthma and allergens (p value >0.05).

Some findings were collimated with standards i.e the site of light at the side of classes, construction of school buildings according to wind direction, number of pupils/class.

Acknowledgements:

I am very grateful to school health unit staff in Gizan for their unlimited cooperation. My thanks extended to Dr. Ala addin Ahmed and Dr. Eltigani Osman, for reading and commenting on the manuscript. Headmasters of

primary schools are warmly thanked for facilitating schools visits. Thanks a lot all of you.

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