

MOTIVATING SCHOOL CHILDREN TO ADAPT BETTER
ENVIRONMENTAL HYGIENE


By


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Certified as bonafide research work


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INTRODUCTION

I INTRODUCTION

Nature is fascinating. It provides all the pleasures and nourish human life on earth. It has become very inevitable for leading healthy life. Health is a dynamic status that result from an interaction between your hereditary potential, environmental influences and life style selections. Good health depends on practicing good personal hygiene, developing good eating habits, exercising property and getting rest and sleep. Indeed, one can not deny that positive health habits are conducive to good health (Carter and Wilson, 1982).

According to WHO health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infection. However, good health depends on more than absence of disease or the practice of good healthy habits and sanitation. Hygiene is defined as the science of health and embraces all factors which contribute to healthful living (Park, 1994). Sanitation means the science of safeguarding health. The National Sanitation Foundation of U.S.A. has defined it as a way of life. It is the quality of living in a clean home, preparing food in a clean kitchen, clean work place and surrounded by a clean community. In other words, man has to fit himself into a clean environment (Educational Planning Group, 1990).

Cleanliness, hygiene and health are interwoven and interdependent on each other to create a better

environment. Any crisis in the above three factors causes serious chaos and disturbance to the environment. Since a long time, this sanitation is rapidly deteriorating and causing several disasters to the biosphere.

For maintaining good sanitation, cleanliness and hygiene are important. Cleanliness means not only clean bodies and clean minds but also clean homes, clean streets, clean playground, clean schools and clean public buildings. According to Anderson (1991) clean living is the first and most important step in the prevention of disease. Each family must protect itself against disease. One should see to it that the neighbours also understand the importance of clean living so that all the homes will be safe and happy places.

Human generate large amounts of waste, which must be handled in an appropriate manner to live in a safe and sanitary environment. Some of these wastes are sewage composed of human excrement, garbage from food materials, and solid waste, which is a by-product of "throw-away" society. If proper attention is not paid to the disposal of these wastes, significant diseases can occur due to poor sanitation that could threaten entire population (Insel and Roth, 1988).

If an individual is making his surroundings filthy, then it is his or her health which is affected. Environmental hygiene cannot be achieved by the effort of government alone. It requires the active support and co-operation of the people. Besides, the people lack

civic consciousness and they do not co-operate in the maintenance of hygienic conditions. The difficult task of improving environmental hygiene is possible only if the people develop civic consciousness (Srivastava, 1981; Kumar, 1987).

According to Devadas and Jaya (1984); Suriakanthi (1991) late childhood extends from the age of six years to time when the individual becomes sexually mature. Late childhood is the period when the child is expected to learn the rudiments of knowledge that are considered essential for successful adjustments to adult life. It is also the time when certain essential skills are learned through the formal curriculum of the school and the extra curricular activities it provides. At this stage of the child's life, education imparted regarding environmental hygiene and cleanliness will be very effective as the child retains the information fresh in the mind and strive to act accordingly.

Good health is of immense importance for personal happiness, family progress and for the prosperity of nation. School going children is the only ideal group which can play a dominant role in the building of a strong and prosperous nation. It is the responsibility of the school to provide for their welfare and co-operation with the home and the community in organising an effective health education programme. The idea for teaching children about health has been around for many years, but

the idea of addressing this task in a serious and comprehensive manner is a new one, to most schools (Kaur and Sharma, 1987).

In the late childhood, the child's development is a continuous, complex process. This is a dynamic period in which the child learns social skills and independence. The child moves away from dependence on the home and family and toward the growing influence of school and peer groups. During this age, the child's life is accentuated by newfound, independence and the ability to solve problems and plan strategies (Brophy and Wills, 1981; James and Mott, 1988).

Environmental education has been defined as an educational process dealing with man's relationship with his natural and man-made surroundings and encompass the relation of population, health, pollution technology, housing, proper nutrition to the total human environment. The purpose of environmental education is to provide knowledge to the people so that they can adjust with the environment and enjoy decent environment (Goel and Jain, 1987).

Knowledge of school sanitation must form an integral part of the daily life. The students with the help of teachers should participate in work for cleaning the surroundings, coverup pits, remove garbage, keep the urinals and latrine clean. They should drink only boiled or chlorinated water and they should never touch any food from vendors. The discipline and knowledge they acquire

in the schools is carried in to their lives. School curriculum should include environmental education both as an intrinsic part of other subjects and as a separate subject. Taking children out of the class room whenever appropriate, first of all in the immediate surroundings of their school (Singh, 1992).

According to Chatterjee (1990) imparting knowledge through education has become a prime factor to prevent quick death of our nature. Today's school children are tomorrow's leaders and they should be moulded properly through effective education on environmental hygiene from very budding stage. So the investigator has taken up the study on **Motivating School Children to Adapt Better Environmental Hygiene Concepts** with the following objectives:

To

1. Assess the environmental hygiene concepts perceived by the school children.
2. Impart knowledge on the environmental hygiene problems and solutions.
3. Evaluate the knowledge acquired by the school children.

REVIEW OF LITERATURE

II REVIEW OF LITERATURE

The literature pertaining to this study on "Motivating School Children Adapt Better Environmental Hygiene Concepts" is dealt under the following headings.

- A. Concepts of Environmental Hygiene.
- B. Factors enhancing environmental hygiene.
- C. Need for educating children on environmental sanitation.
- D. Agencies involved in educating children.
- E. Studies conducted.

A. Concepts of Environmental Hygiene

Hygiene is the science of the establishment and maintenance of health. The word sanitation denotes cleanliness required for healthy living. Sanitary hygiene denotes environmental sanitation, viz. sewerage, drainage, etc. whereas community hygiene denotes the science that deals with the maintenance of the health of community (Ghosh, 1981).

Health has been defined as "a state of complete physical, mental and social well being. It is accordingly, a function of several factors including nutrition, personal hygiene, family life, collective living environmental conditions and access to social services including health and medical care (Goyal, 1990).

Health is the life long dynamic fusion of your interacting physical, emotional, social, intellectual and spiritual strength and limiting as they assist you in

mastering the developmental tasks necessary for you to enjoy a productive and satisfying life (Payne and Hahn, 1986).

Sanitary disposal of all human wastes is essential for maintaining the good environmental sanitation. Safe facilities for bathing and washing of clothes, must be provided. Until the proper hygienic measures are essential to all who value their own health and that of their loved ones. Eliminate all flies and screen all windows and doors to keep out flies and mosquitoes. Protect your food from contamination. Boil drinking water. Insist that all members of your household wash their hands before handling food (Anderson, 1991).

Diseases occur due to imbalances caused between man and his environment. Housing is part of the total environment of man and is greatly responsible for the health and also for the occurrence of disease among the dwellers. The house should be free from smoke, dust, odour, excessive noise, mosquito and flies (Srivastava, 1984; Rameshwaran, 1989).

The ultimate solution for many of the communicable diseases, which are prevalent in the country, depends on the improvement of environmental sanitation. There are certain trends within the water supply and sanitation sector which are disturbing from a public health point of view. Nothing is more dangerous to public health than intermittent water supply. So, drinking water supply programmes must be accompanied with sanitation programmes

and health education programmes aimed at improving personal hygiene. Unfortunately, in India today there is little interest in pushing sanitation and health education programme (A citizen's Report, 1982).

According to Canter (1980), the objectives of environmental sanitation are:

1. To create awareness of pollution among the children and how to prevent it.

2. To fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations.

3. To provide healthful, protective, productive and beautiful surroundings to the people.

4. To attain the worldwide sanitation.

5. To preserve important historical, cultural, and natural aspect of our national heritage.

6. To enhance the peoples standard of living through to prevent the communicable diseases.

B. Factors Enhancing Eenvironmental Hygiene

Man may be called the product of the interaction between his inborn properties an his environment. The physical environment of man consists both of natural and artificial factors such as temperature, humidity, rainfall, air, water, soil, human, animal and industrial wastes, smoke, dust etc. It is one of the major problems of public health to investigate and define the optimum range of environmental conditions which are conducive to

healthful living and to correct or improve the factors which may have deleterious effects on our health. The major factors of environmental sanitation are considered as water supply, air, ventilation, disposal of human wastes, refuse and the dead, housing and the sanitation of fairs and festivals (Ghosh, 1980).

In the past, sanitation was centred on the sanitary disposal of human excreta, even now, to many people sanitation still means the construction of latrines. In actual fact, the term sanitation covers the whole field of controlling the environmental with a view to prevent disease and promote health. Man has already controlled a number of factors in his environment. It is the control of these factors that has been responsible for considerable improvement in the health of the people (Park, 1994).

In most cases the priorities in terms of investment of public funds are seldom in the areas of environmental hygiene, sanitation, supply of clean drinking water, or the protection of air, water, and soil. Many of the urban and rural hygiene problems can be solved if each citizen decides not to use streets as latrines (Swaminathan, 1991).

According to Odum (1975) control of environmental "Health risk" factors the air, water and noise pollution. Other sanitation problems such as poor excreta and sewage disposal, inadequate clean water supply and food sanitation. For maintaining good environmental hygiene,

basic infra structural services directly related to the improvement of environmental conditions such as sanitation facilities, water supply, disposal of solid wastes.

Water is necessary to have a sufficient supply of pure water for drinking and cooking purposes, as well as for cleanliness and for disposal of refuse. Water is also required for industrial processes. An adequate supply of wholesome water is very important for any community. From the standpoint of public health, water should be provided in adequate volume (Educational Planning group, 1990).

Pollution from traditional methods of waste disposal including human excreta, poorly ventilated and over crowded housing, not so-safe drinking water from dug wells and local streams and burning of cowdung as fuel are widespread in rural areas. These cause serious health hazards. Due to inadequate sewage disposal facilities, refuse invariably gets mixed with the open water resources, resulting in the out break of several water borne diseases (Smolensky, 1982; Singh, 1988).

One can think the importance of clean air as on an average a man inhales about 17kg. The discharge of contaminants into atmospheres may be due to some activity of man. Air pollution is caused by discharge of contaminants such as dust, fume, gas, odour, smoke (Kudésia, 1986).

In developing countries the unhygienic practices of people and faulty sanitation aggravate soil pollution. The innumerable pathogens contained in these wastes contaminate the soil and vegetable crops and cause serious health hazards for man and domesticated animals (Mahadevan, 1988).

"Housing" in the modern concept includes not only the 'physical structure' providing shelter, but also the immediate surroundings and the related community services and facilities. Every dwelling must have a separate kitchen, adequate lighting and ventilation to improve environmental hygiene. A sanitary privy is must in every house. Garbage and refuse should be removed from the dwelling atleast daily and disposed of in a sanitary manner. The house should have a safe and adequate water supply available at all times (Birdie, 1986; Park, 1994).

Garbage is the food reject at any point from growing to final eating. Garbage attracts numerous insects, particularly flies. Contribution of flies is well known in transmission of communicable diseases besides their nuisance value. Besides rat and other vermin also feed on garbage (Shanmugam and Subramaniam, 1982).

It is important for all of us to wash our hands frequently and bathe the whole body thoroughly everyday. All floors should be swept and thoroughly cleaned everyday. Cleanliness is absolutely essential to health. Clean hands, clean bodies and clean homes are the very basis of good environmental hygiene. The first thing the

public health authorities are concerned about is the preservation of a good water supply and the proper disposal of sewage and other refuse. Proper disposal of body wastes is one of the first laws of health. Each one is responsible for their own health (Anderson, 1991).

It is well-known fact that the absence of proper facilities for the disposal of human excreta leads to a variety of problems. Clean, healthy, cheap and socially uninhibiting means of human excreta disposal is a primary requisite for the development of the family and society on the one hand and cities and nations on the other (Ali, 1993).

C. Need for Educating Children on Environmental Sanitation

Human constantly interlude upon nature. In order to successfully live in natural and social world's human understand the origin, composition, characteristics and life-sustaining processes of these world. Children's attention should be focussed on the diversity of natural and social settings, those close to home as well as far removed. During the course of a typical school-day, they should be provided ample oppurtunities to interact with and learn from, natural and social phenomena (Peters, 1994).

The need of the hour is to inculcate a responsible attitude towards nature in every person, a concern for the condition of the environment in which one lives and

works. This should be the aim of environmental awareness. Children develop an awareness for nature at quiet during this age and they acquire an aesthetic responsiveness so necessary for the harmonious development of man (Lal, 1992).

The middle years are healthier than the pre school period. The school child has more of himself to invest in relationships, problem solving, and acquiring of skills and knowledge. None he works to develop and perfect many motor co-ordinations, enjoying the sense of adequacy that grows from successful performance (Smart, 1977).

Children eight years of age and older are capable of carrying out personal hygiene practices daily. They can be held responsible in varying degree for bathing, grooming and dressing. During this age children are busy with play and other activities and might need to be reminded to carry out practices. They might refuse to brush their teeth, take bath or change their clothes from one day to next. Through imparting effective education and parents who are concerned about the cleanliness and attractiveness of their children might find that they need to discuss these issues with the children and clarify decision making responsibilities (James and Mott, 1988).

Many of the children will have diseases due to their environment. Poor sanitation, unclean water, inadequate housing, and other factors all have a direct influence on

child health. Children are particularly susceptible to some common communicable diseases, which often occur in small epidemics due to poor environmental sanitation (Hart, 1980).

In India, the high incidence of mortality and morbidity, particularly among children, is largely attributed to unsafe water supply, unhygienic practices and insanitary environment. Sanitation is a very basic human need of life. Unless environmental sanitation is ensured by the community, diseases will be affecting the health of the children and the economy of the country as a whole (Kamble, 1984; Singh, 1992).

Unless the school children are educated on the need for keeping their environment neat and clean, sanitation would remain a dream. First of all, the surrounding of the schools and public buildings should be kept clean and neat. If our schools and their surroundings are kept clean and the teachers and children are in a position to remove even the small paper bits in the streets and throw them in the nearby dustbins. If the schools have urinals and latrines constructed and are used properly, they will serve as models to the community (Manohar, 1980; Kumar, 1987).

Good habits serves as an instrument for the promotion of health and long life. So health and education have relative role for the longevity of life. Education can not go on successfully unless the body is

healthy. If good habits are developed among the children by education or the health instruction, they shall be led to systematic education and successful living. Even the education may bear fruits if proper health instructions are imparted to the children and habits are developed in them. Hence we cannot ignore the importance of personal cleanliness and personal hygiene in school as well as in life (Mangal, 1985).

The principle involved in the teaching of the subject to the school children is that of habit-training, wash drill, tooth brush drill, nail drill, hair drill and breathing must be regular parts of class routine and hair, hand, teeth should be subjects of daily inspection. Therefore, in order to inculcate these virtues in the childhood through effective environmental education, the school children are to be motivated to patch these damage and to restore a clean, healthy, hygienic environment (Lay, 1992).

Government of the States and Centre have taken some interest in the preservation of environment. Schools must act as catalyst in the development of awareness by encouraging children on environmental sanitation. In the primary stage of education, concepts such as hygiene, public health, nutrition, and even pollution have been introduced. These are good interdisciplinary topics for children and closely related to their environment (Chaudhari, 1983).

D. Agencies Involved in Educating Children

The voluntary health agencies occupy an important place in health programmes. A voluntary health agency may be defined as an organisation that is administered by an autonomous board which holds meetings, collects funds for its support chiefly from private sources, conducting a programme directed primarily to furthering the public health by providing health education (Park and Park, 1976).

National Environment Awareness Campaign (NEAC)/National Environment Month (NEM)

Realising the importance of well informed society, the Department of Environment with the objectives of creating environmental consciousness at the national level, observes a part of every year conserved as National Environment Month (NEM) (Trivedi, 1992).

Centre for Environment Education, Ahmedabad

The department established this centre in 1984 to meet the country's need for creating high quality educational materials and for propagating awareness among the children and urban/rural community. The educational material developed by the centre includes guide books and documents on country's natural resources. The centre has published a hand book on Environmental Education entitled "Joy of Learning".

C.P.R. Environment Education Centre, Madras

The C.P.R. Environment Education Centre was set up by the department in 1988 with the objective of

increasing consciousness and knowledge of the people about environment as well as the major environmental problems facing the country today. The centre is also involved in the generation of resources material and educational packages on environmental conservation (Khoshoo, 1985).

National Council for Educational Research and Training (NCERT)

The National Council for Educational Research and Training is making systematic attempts to deliver an environmental curricula as part of the regular subjects for inculcating awareness in students. Several universities have launched courses in Environmental science. Environmental research and development in universities is supported by the government. NCERT has introduced the concepts of environmental studies at primary level (SARMA, 1991).

World Health Organisation (WHO)

The World Health Organisation is a specialised, non-political, health agency of the United Nations with headquarters in Geneva. It was established in 1948. For the south-east region, New Delhi is the headquarters. The objective of the WHO is "the attainment by all peoples of the highest level of health". The another objectives of WHO is the promotion of environmental health has always been an important activity of WHO. WHO advises governments on national programmes for the provision of

basic sanitary services. Recent activities are directed to protection of the quality of air, water, and food, health condition etc. A number of programmes have been developed such as the "WHO Environmental Health Oriented Programme" and "WHO Environmental Health Monitoring Programme" towards improving environmental health (Educational Planning group, 1990).

United Nations Children's Fund (UNICEF)

UNICEF is one of the specialised agencies of the United Nations. It was established in 1946. Its aim is to cooperate with the developing countries in their efforts to improve the conditions of their children and youth and prepare them to contribute to the progress of their society. The main field of UNICEF assistance is health service - child health service, environmental sanitation and health education. It assists in the control of diseases which are responsible for morbidity among mothers and children such as vitamin deficiencies and trachoma (Ghosh, 1981).

E. Studies conducted

Environment can be used for development of basic skills (language, modelling, ability to use pictorial representation, environmental resources) Study skills (Mapping, observing, collecting, classifying) and social skills (Health, personal hygiene, cleanliness of surroundings and conservation and judicious use of environmental resources).

In India, number of cross-sectional researches on

attainment of different concepts were conducted at the Venkateswara University, Tirupati (Rao and Devi, 1990). Khuntia (1980) studied development of environmental concepts among rural and urban children of class - V at four different levels of concept attainment. Data were obtained by administering four different concept development tasks on small groups one after the other. The study revealed that children's attainment of environmental concepts decreased along with rise in levels of concept attainment. But there was no significant difference between children belonging to urban and rural areas.

Das (1981) made a cross sectional study on attainment of environmental concepts among children belonging to different grades of primary school. She established significance of difference in attainment of environmental concepts among children belonging to different educational levels. The mean scores for different educational levels increased with rise in educational level.

Puspa (1981) studied the factors causing social deprivation as a function of cognitive styles of primary school children from urban, semi-urban, rural and tribal background, using the prolonged deprivation scale. Their study revealed that social deprivation was caused due to economic, environmental and psychological perspectives. Low income of the family caused problems of residential accommodation, food, clothing, interaction with parents

and recreational activities.

Barik, (1978) and Mohakudha, (1979) have independently developed concept development schedule on scientific concepts for grades 3,4 and 5 in Orissa. Similarly Khuntia (1980) and Das (1981) have independently developed environmental concept development tasks for grade 5 children at different levels of concept attainment.

Saxena et al., (1981) have developed and standardised an environmental awareness test for the children of grades 3,4 and 5. The test has been standardised for the Hindi speaking children in Bhopal city. The sample for the study were 275 children. They divided the physical environment into six categories. Universe, air, water and weather, rocks and soil, housing and clothing, plants and animals, and abstract concepts.

Rout (1988) did the study on "Environmental concept development in children". Cross sectional method was followed in this study in order to measure different levels of concept attainment among primary school children.

Kavitha Devi (1993) conducted the study on "Developing environmental concepts in primary school children. The sample for the study was drawn from three selected schools to represent State Board, Central Board and Matriculation systems. Totally 450 children, 150 from each standard (II, III, IV) were selected. She found out the average percentage of marks scored by the children in

the final evaluation test showed that the concepts on different areas of environment were improved. Astronomy as environmental concept was not grasped by many of the children even after the environmental education.

EXPERIMENTAL PROCEDURE

III EXPERIMENTAL PROCEDURE

The experimental procedure of the study is discussed under the following headings:

- A. Preliminary survey
- B. Environmental education
- C. Evaluation of the education programme

A. Preliminary survey

The preliminary survey includes

- a. Selection of sample
- b. Selection of method
- c. Preparation of tool
- d. Conduct of the survey
- e. Consolidation and presentation of data

a. Selection of sample

The sample for the study was taken from Ramalingam Colony Corporation School. The school was located near the university campus. Moreover the co-operation of the teachers and the students motivated the investigator to select this school for the study.

Totally 100 children, 50 from each classes (VI and VII standards) were selected as the sample for the study, comprising 50 girls and 50 boys.

b. Selection of method

The personal interview method was adopted for collecting data. According to Shulka and Gulshan, (1983) personal interview method is the method in which data are collected by the investigator personally by asking questions pertaining to the enquiry from persons from

whom the information is to be obtained. The advantage of this method is as the investigator is present on the spot for conducting the enquiry, the data collected would be first hand and accurate.

c. Preparation of tool

Interview schedule was selected as a tool to collect necessary information. The interview schedule comprised of two parts. The first part comprising 6 questions on socio-economic background and questions on environmental aspects were included in the second part.

Before finalising the interview schedule, a pilot survey with 5 samples was conducted. According to Gupta (1993) before final form of the questionnaire is adopted it is desirable to carry out a preliminary experiment on a sample basis. The main advantage of this pilot study is to find out the draw backs of the schedule that is which questions ought to be deleted and which more ought to be added. Based on the results of the pilot study the schedule was modified, finalised and presented in Appendix I.

d. Conduct of survey

With the prior permission from the school authorities the selected children were contacted at their leisure time, the required information were collected through personal interview method to assess the knowledge of children on environmental hygiene.

e. Consolidation and presentation of data

From the interview schedule supplied to the samples, their socio-economic background, their knowledge, attitude and practice on the environmental hygiene were consolidated, statistically analysed and presented in the next chapter.

B. Environmental education

Environmental education is an integrated process which deals with man's inter-relationship with his natural and man-made surroundings. Environmental education is a study of factors influencing eco system, mental and physical growth, living and working condition, decaying cities and population pressures (Singh,1992).

Environmental education includes:

- a. Framing syllabus
- b. Conducting classes

a. Framing syllabus

In consultation with the experts in the field of environmental hygiene, teachers, and also referring the environmental text books, five important concepts were selected. These concepts include personal hygiene, healthy habits, domestic cleanliness, environmental issues and environmental pollution. Based on these concepts the course content were prepared. The syllabus framed for the study was given in Table I.

TABLE I
SYLLABUS OF THE ENVIRONMENTAL EDUCATION

S.NO.	CONCEPTS	COURSE CONTENT	METHOD
1.	Personal Hygiene	Clean body, neat dress, care of teeth, eyes, nail, skin, care of body parts, good health.	Charts, demonstration of better ways of brushing teeth and cutting nails.
2.	Healthy habits	Proper food habits, rest and sleep, eating nutritious food, causes for diseases and prevention methods.	Charts, posters Demonstration of better way of drinking water
3.	Domestic cleanliness a. Interior b. Exterior	Importance of clean home, orderly arrangement of articles Cleanliness of surrounding, proper method of disposing waste	Charts, posters Charts, posters
4.	Environmental issues	Interdependence of man with birds, animals, insects, plants, domestic, animals, tree planting, need for fresh air, water, source of water, use of water, water purification, mountains, hills, city, country, continents, deserts, solar system, earth, sun, moon, monsoon, climate, weather, and season.	Charts, posters, games, demonstration of water purification methods, demonstration of making garden.
5.	Environmental pollution	air, water, noise, waste disposal recycling-manure pits, biogas.	Charts, posters

b. Conducting classes

To impart knowledge on environmental hygiene, both theoretical and practical classes were conducted for the selected group for a period of 45 days, one hour per day for 5 days in a week. Visual aids such as charts, posters, slogans, models were used for effective teaching programme. As the saying goes "Seeing is Believing" the teaching aids helped to impart knowledge more effectively and created an interest and willingness among the children to receive the information. This method motivated them to learn more new facts about environmental hygiene.

An exhibition was also put up highlighting the ideal concepts on environmental hygiene by the investigator. The students gained knowledge on environmental hygiene through this exhibition.

c. Evaluating the education programme

A simple evaluation proforma (Appendix-II) was used to assess the knowledge acquired by the selected samples on better environmental hygiene after the environmental education programme.



PLATE 1

CONDUCTING CLASSES WITH VISUAL AIDS



a. HYGIENIC WAYS OF HANDLING WATER

PLATE 2

CONDUCTING CLASSES THROUGH DEMONSTRATION



b. KITCHEN GARDENING



c. CLEANING THE SCHOOL AND ITS SURROUNDINGS



a. PASSING THE PARCELS



b. WEB OF LIFE

PLATE 3

ENVIRONMENTAL GAMES



PLATE 4

STUDENTS AND STAFF VISITING THE EXHIBITION

RESULTS AND DISCUSSION

IV RESULTS AND DISCUSSION

The findings of the study on "Motivating School Children to Adapt Better Environmental Hygiene Concepts" are discussed under the following headings:

A. General information of the children.

1. Socio-economic background
2. Conditions of living Environment

B. Impact of environmental education.

A. General Information of the Children.

This deals with socio-economic background and conditions of living environment.

1. Socio-economic background of the children

The Socio-economic background of the children are as follows:

a. Type of family

From the information gathered 73 per cent of children came from the nuclear family and 27 per cent came from the joint family.

b. Age of the children

Table II shows the age of the selected children.

TABLE II
AGE OF THE CHILDREN

Age in years	Percentage of children	
	VI standard N=50	VII standard N=50
11	56	-
12	34	34
13	10	50
14	-	16

The age of VI standard children ranged between 11 and 13 years. The age of VII standard children ranged between 12 and 14 years.

c. Ordinal Position of the Children.

Table III depicts the ordinal position of the children.

TABLE III
ORDINAL POSITION OF THE CHILDREN

Ordinal position	Percentage of children	
	Boys N=50	Girls N=50
Only Child	8	6
1st	34	24
2nd	28	32
3rd	26	30
4th	4	8

In general eight per cent of boys and six per cent of girls were single child in the family. Twenty eight per cent of boys and 32 per cent of girls were second

child and 26 per cent of boys and 30 per cent of girls were third child in the family. Few per cent were fourth child in the family. More than 30 per cent of the families had more than three children which shows their ignorance about small family norm.

d. Age of the Parents

Table IV shows the age of the parents

TABLE IV
AGE OF THE PARENTS

Age	Percentage of children	
	Father	Mother
30-35	-	50
35-40	34	33
40-45	37	8
45-50	20	9
50-55	7	-
55-60	2	-

It is clear from the above Table that the age of the fathers ranged between 35 and 55 years and the age of the mothers ranged between 30 and 50 years. Only two per cent of fathers were above 55 years of age.

e. Educational status of the parents

Table V and Figure (1) show the educational status of the parents.

TABLE V
EDUCATIONAL STATUS OF THE PARENTS

Education	Percentage of Father	Mother
Illiterate	36	55
Primary	20	16
Middle	13	11
High school	22	12
Higher secondary	9	6

In general a majority of 36 per cent of fathers and 55 per cent of mothers were illertates. Fifty five per cent of fathers and 39 per cent of mothers had education upto the highschool level. Only nine per cent of fathers and six per cent of mothers had higher secondary education.

f.Occupational Satus of the Parents

Table VI reveals the occupational status of the parents.

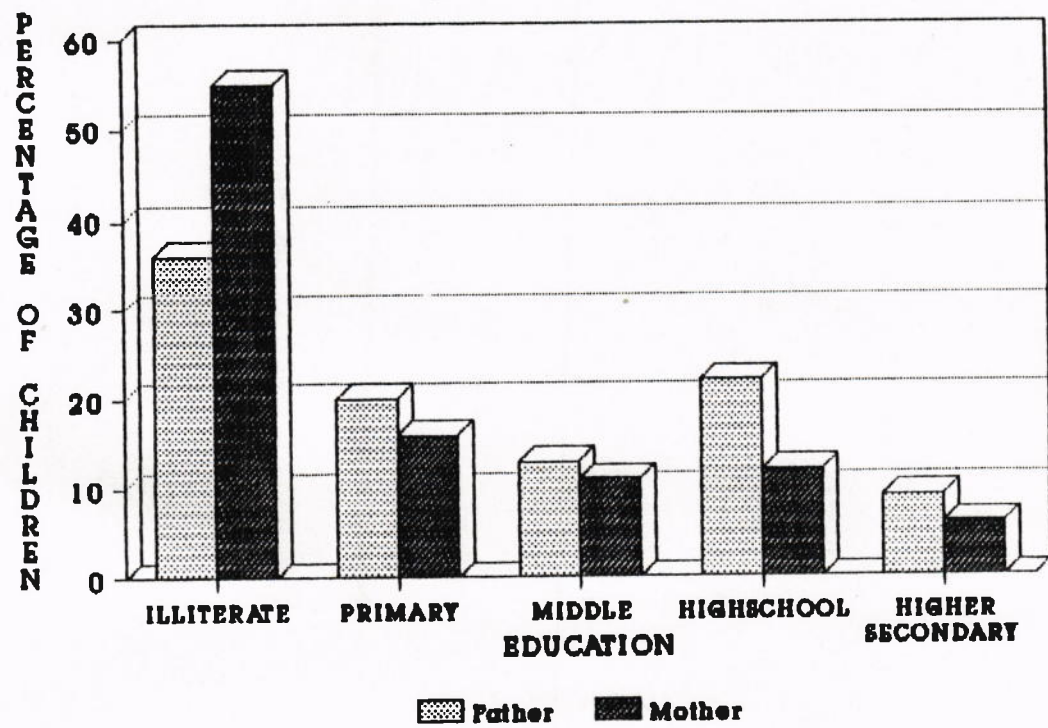


Fig.1 EDUCATIONAL STATUS OF PARENTS

TABLE VI
OCCUPATIONAL STATUS OF THE PARENTS

Occupation	Percentage of	
	Father	Mother
Coolie	64	69
Street vendors	10	-
Business	9	-
Auto driver	8	-
Clerk	5	-
Painter	3	-
Tailor	1	2
House wives	-	29

A majority of 64 per cent of fathers and 69 per cent of mothers were coolies. Nine per cent of fathers had undertaken business as their occupation. Twenty nine per cent of mothers were full time homemakers.

g. Family income

Table VII and Figure (2) show the monthly income of the family.

TABLE VII
FAMILY INCOME

Income (Rs)	Percentage of Families
500 - 1000	45
1001 - 1500	28
1501 - 2000	20
2001 - 2500	7

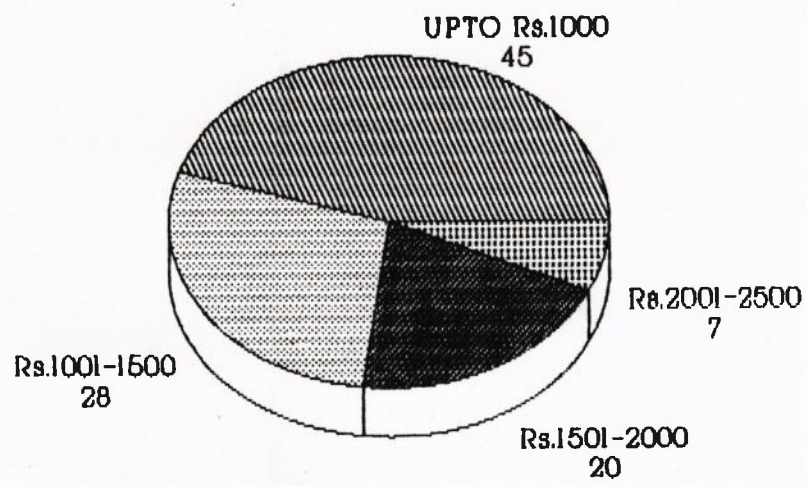


Fig.2 FAMILY INCOME

A majority of 73 per cent of families belonged to low income groups earning Rs.500-Rs.1500. The remaining 27 per cent of families belonged to middle income group earning Rs.1500-Rs.2500. None of them came under high income group. They had undertaken less wage earning jobs because of their low educational level.

2. Conditions of living environment

The environmental conditions were studied, analysed and presented as below:

a. Personal cleanliness

The personal cleanliness of the children are shown in Table VIII

TABLE VIII
PERSONAL CLEANLINESS OF CHILDREN

Criteria	Percentage of Children											
	VI Standard						VII Standard					
	Boys N=25			Girls N=25			Boys N=25			Girls N=25		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
Body	-	72	28	-	88	12	12	84	4	4	52	44
Dress	4	40	56	-	28	72	8	48	44	-	20	80
Teeth	4	40	56	-	48	52	-	36	64	-	20	80
Eyes	12	64	24	4	92	4	4	92	4	-	64	36
Hair	4	76	20	4	72	24	4	76	20	-	68	32
Nail	4	40	56	-	24	76	-	36	64	-	16	84
Skin	8	68	24	-	76	24	4	88	8	-	36	64
Toes	-	68	32	-	68	32	-	88	12	-	40	60

From the above Table it is clear that the personal cleanliness of children was not upto the standard. The reason might be that the majority of them came from an urban slum where the living condition was very poor.

b. Facilities in the house

Table IX depicts the facilities in the house

TABLE IX
FACILITIES IN THE HOUSE

Facilities	Percentage of Children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Adequate water supply	80	72	64	64
Dust bins	68	84	100	92
Proper drainage facilities	48	48	28	56
Urinals/Latrines	12	16	32	44

* Multiple response

In general, 64-80 per cent of boys and girls had adequate water supply in their houses. Among all the children, a majority of them had the dustbins in their houses. Only 20-50 percent of houses had proper drainage facilities.

In general, only few children had separate urinals/latrines in their houses. A Majority of the boys (60 per cent) and girls (24 per cent) used common latrines. The remaining boys and girls defecated in the open field or roadside.

c. Condition of the space

Table X and Figure (3) show the condition of the space around the house.

TABLE X
CONDITION OF THE SPACE AROUND THE HOUSE

Details	Percentage of Children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Garbage	96	88	100	92
Stagnation of waste water	72	72	76	68
Sewage water	48	64	68	52
Industrial wastes	12	24	12	28
Defecation	8	8	44	12

* Multiple response

In general majority of all students mentioned that there was heap of garbage around the house. Seventy two per cent of boys and girls in VI standard, 76 per cent of boys and 68 per cent of girls in VII standard indicated the stagnation of waste water around the house.

d. Maintenance of school and its surroundings

Table XI shows the maintenance of class room and school surroundings.

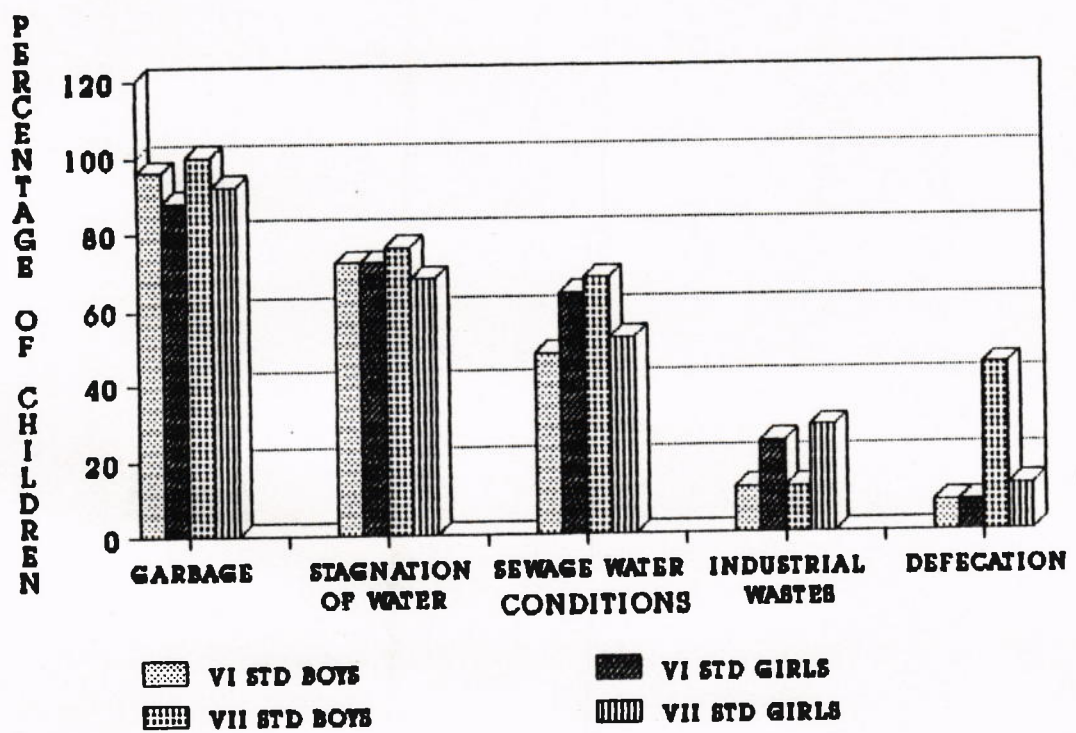


Fig.3 CONDITION OF THE SPACE AROUND THE HOUSE

TABLE XI
MAINTENANCE OF SCHOOL AND ITS SURROUNDINGS

Criteria	Percentage of Children			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Maintain classroom neat and clean	60	88	64	70
School surroundings neat and clean	62	88	64	72
Follow the rules and regulations	64	100	64	72

From the above Table it is clear that among all the students a majority of girls from both classes had better cleanliness concept than boys.

B. Impact of environmental education

The impact of environmental education was studied, analysed and presented as below:

1. Awareness on healthy habits

Seven habits were identified as important healthy habits that should be inculcated among children by Venmathi and Muthu, (1994). In this study the awareness of selected children on these habits were studied.

Table XIIa shows the awareness of selected children on three healthy habits among the seven habits before and after environmental education.

TABLE XIIa
AWARENESS ON HEALTHY HABITS

Habits	Percentage of Children			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Washing hands before eating				
Before	80	80	72	80
After	84	88	82	84
Eating nutritious food				
Before	72	72	64	76
After	76	80	76	84
Taking bath				
Before	32	36	16	20
After	76	76	86	100

From the above Table it is clear that the education did not have much effect on improving the habit of washing hands before eating and eating nutritious food among the selected children. There was significant improvement among boys and girls after education on the awareness of importance of taking bath.

The awareness on the remaining four healthy habits among selected children were statistically analysed and presented in Table XIIb.

TABLE XIib
 AWARENESS ON HEALTHY HABITS

Aspects	Samples	Before education	After education	CR
Washing mouth before and after eating	VI Standard			
	Boys	13	19	1.77NS
	Girls	17	21	1.32NS
	VII Standard			
	Boys	6	20	3.96**
	Girls	14	22	2.52*
Washing Clothes	VI Standard			
	Boys	7	19	3.40**
	Girls	5	19	3.96**
	VII Standard			
	Boys	2	22	5.66**
	Girls	3	25	6.27**
Washing hands with soap after toileting	VI Standard			
	Boys	1	21	5.70**
	Girls	4	19	4.26**
	VII Standard			
	Boys	3	20	4.82**
	Girls	5	23	5.13**
Hygenic way of handling water	VI Standard			
	Boys	-	20	5.77**
	Girls	2	20	5.13**
	VII Standard			
	Boys	2	25	6.53**
	Girls	3	22	5.37**

NS: Non significant ** Significant at 1% level

* - Significant at 5% level

There was a significant improvement in the knowledge on the importance of healthy habits after education at 1 per cent level whereas in the case of washing mouth before and after eating there was no significant difference among VI standard children. There was a significant improvement on the healthy habits at 5 per cent level among VII standard girls.

2. Awareness on domestic cleanliness

Table XIII shows the awareness of children on the importance of domestic cleanliness before and after environmental education.

TABLE XIII
AWARENESS ON THE IMPORTANCE OF DOMESTIC CLEANLINESS

DETAILS	PERCENTAGE OF CHILDREN			
	VI STANDARD		VII STANDARD	
	BOYS N=25	GIRLS N=25	BOYS N=25	GIRLS N=25
General cleanliness of the house				
Before	68	60	52	60
After	80	84	80	80
Cleanliness Kitchen				
Before	64	88	52	60
After	76	92	80	92
Arrangement of things in the house				
Before	64	84	60	80
After	84	92	72	84

From the Table it is evident that there was significant improvement among boys and girls after education on the awareness of the importance of domestic cleanliness. A majority of girls had knowledge on domestic cleanliness before education when compared to boys.

3. Awareness on effect of poor sanitation

Table XIV shows the awareness on effect of poor sanitation.

TABLE XIV
AWARENESS ON EFFECT OF POOR SANITATION

Samples	Number of children		CR
	Before education	After education	
VI Standard			
Boys	14	20	1.84 NS
Girls	12	21	2.69 **
VII Standard			
Boys	16	24	2.83 **
Girls	16	24	2.83 **

NS - Non Significant ** Significant at 1% level

There was a significant improvement in the knowledge on the awareness of effect of poor sanitation after education at one per cent level. Only in the case of VI standard boys, there was no significant difference.

4. Awareness on diseases caused by poor environmental hygiene

Awareness of the children on various diseases caused by poor environmental hygiene are presented in Table XV.

TABLE XV
AWARENESS ON DISEASES CAUSED BY POOR ENVIRONMENTAL
HYGIENE

Details	Percentage of children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Cholera				
Before	44	24	76	80
After	52	44	84	80
Fever				
Before	40	40	80	80
After	60	48	84	96
Diarrhoea				
Before	32	40	76	80
After	40	48	88	88
Jaundice				
Before	20	12	60	52
After	28	20	72	84
Dysentery				
Before	16	24	68	76
After	20	32	92	80

* Multiple response

In general, there was significant improvement among boys and girls after education on the awareness of various disease caused by poor environmental hygiene.

5. Awareness on facilities needed to improve environmental hygiene

Table XVI and Figure (4) show the awareness of the children on the facilities and help needed to improve the environmental hygiene.

TABLE XVI
AWARENESS ON FACILITIES NEEDED TO IMPROVE ENVIRONMENTAL
HYGIENE

Details	Percentage of children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Adequate number of Toilets	88	92	80	96
Adequate water facility	80	76	88	84
Proper drainage facility	76	84	80	92
Proper facility for garbage disposal	72	64	40	56
Proper cleaning of home and surrounding	36	16	40	36

* Multiple response

From the above Table it is evident that after education they were in a position to identify the needs to improve the environmental hygiene. Majority of children were of the opinion that adequate number of toilets, adequate water facility and proper drainage facility were very important to improve the environmental hygiene.

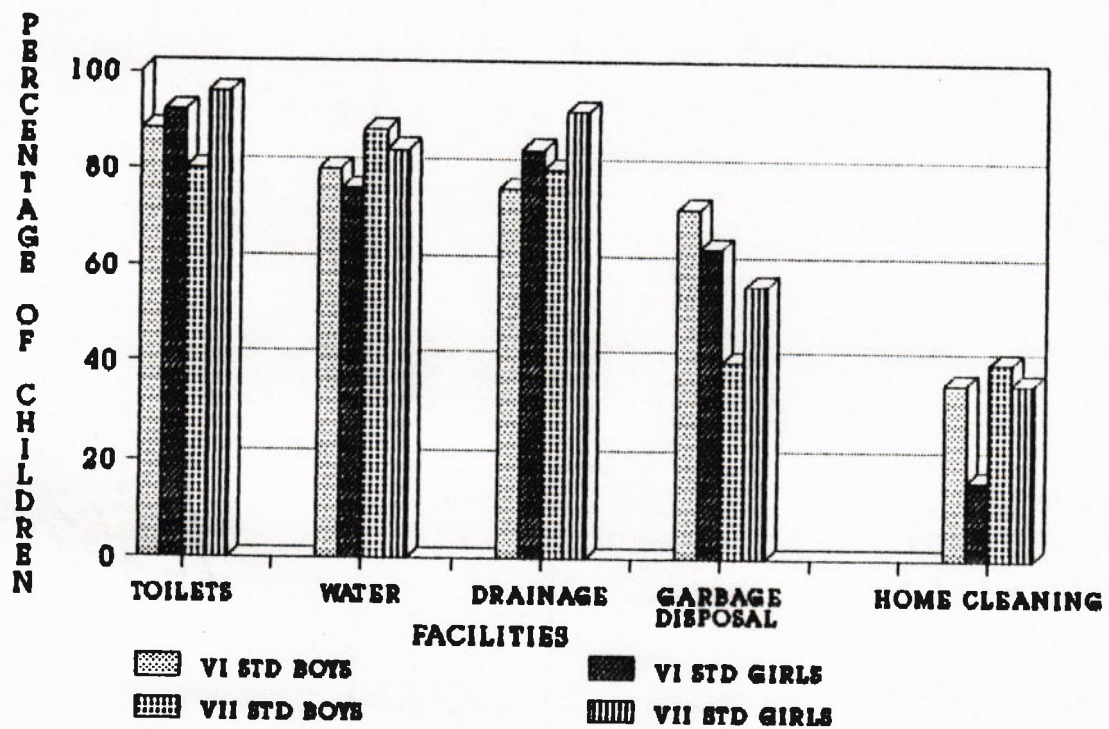


Fig.4 AWARENESS ON FACILITIES NEEDED TO IMPROVE ENVIRONMENTAL HYGIENE

6. Awareness on methods of disposing wastes

Table XVII shows the awareness of children on methods of disposing wastes after education.

TABLE XVII
AWARENESS ON PROPER METHODS OF DISPOSING WASTES

Details	Percentage of children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Proper Drainage and sewage systems	80	88	88	92
Using dust bins	76	80	80	84
Recycling wastes	64	72	80	84
Burning wastes out of dwelling area	36	44	40	60

* Multiple response

From the above Table it is clear that after education they were in a position to identify the methods of proper disposal wastes. Majority of the children mentioned that the proper method of disposing wastes were through proper drainage and sewage systems, using dust bins and recycling wastes.

7. Awareness on causes and effects of various pollutions

Table XVIII shows the awareness of children on causes and effects of various pollution.

TABLE XVIII
AWARENESS ON CAUSES AND EFFECTS OF VARIOUS POLLUTIONS

Details	Percentage of children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Water Pollution				
Causes	74	84	80	74
Effects	76	76	80	80
Air Pollution				
Causes	64	65	64	60
Effects	69	69	78	65
Noise Pollution				
Causes	62	70	78	69
Effects	56	61	64	61

* Multiple response

From the above Table it is clear that after education considerable improvement on the knowledge of causes and effects of various pollutions was observed. Nobody had any idea about these aspects before education.

8. Methods of recycling the wastes

From the information gathered from the children after education it was clear that about 80 to 92 per cent of children were aware of the methods of recycling wastes. The methods of recycling wastes as they understood were using biogas plants, manure pits, wastewater to kitchen garden and paper making.

9. Children's role in protecting environment

The role of children in protecting the environment as indicated by them are presented in Table XIX.

TABLE XIX
CHILDREN'S ROLE IN PROTECTING ENVIRONMENT

Details	Percentage of children *			
	VI Standard		VII Standard	
	Boys N=25	Girls N=25	Boys N=25	Girls N=25
Developing hygenic habits	92	80	88	92
Proper disposal of wastes	80	72	72	64
Proper cleaning of house and its surroundings	72	80	84	68
Recycling the wastes	40	44	48	48

* Multiple response

It is evident from the above Table that about 92 per cent of boys and 80 per cent of girls in VI standard and 88 per cent of boys and 92 per cent of girls in VII standard were of the opinion that developing better hygenic habits in the childhood itself was the major role by children to protect the environment. The other responsibilities the children should take up to improve environmental hygiene were the following method of proper disposing wastes, proper cleaning of house and its surroundings and recycling the wastes.

SUMMARY AND CONCLUSION

V SUMMARY AND CONCLUSION

Good health depends on practicing good personal hygiene, developing good eating habits, exercising properly and getting rest and sleep. Indeed, one cannot deny that positive health habits are conducive to good health. With this as basic motif the study was conducted on Motivating School Children To Adapt Better Environmental Hygiene Concepts with the following objectives to:

- * Assess the environmental hygiene concepts perceived by the school children.

- * Impart knowledge on the environmental hygiene problems and solutions.

- * Evaluate the knowledge acquired by the school children.

The sample for the study was taken from Ramalingam Colony Corporation School. Totally 100 children, 50 from each classes (VI and VII standard) were selected as the sample for the study, comprising 50 girls and 50 boys. The personal interview method was adopted for collecting data. Interview schedule was selected as a tool to collect necessary information. The required information were collected through personal interview method to assess the knowledge of children on environmental hygiene.

General information of the children deals with the socio-economic background and conditions of living

environment.

The socio-economic background of the families of the children revealed the following:

* Most of the children came from the nuclear family. Only 27 per cent came from the joint family.

* The age of VI standard children ranged between 11 and 13 years. The age of VII standard children ranged between 12 and 14 years.

* In general eight per cent of boys and six per cent of girls were single child in the family. Majority of the children were either second or third child in the family.

* In general the age of the fathers ranged between 35 and 55 years and mothers ranged between 30 and 50 years.

* Majority of fathers (36 per cent) and mothers (55 per cent) were illiterates. Fifty five per cent of fathers and 39 per cent of mothers had education up to the high school level.

* Majority of fathers and mothers were coolies. Nine per cent of fathers had taken business as their occupation. Twenty nine per cent of mothers were full time homemakers.

* In general most of the families belonged to low income groups earning Rs.500-Rs.1500/-. The remaining 27 per cent of families were middle income group earning Rs.1500-Rs.2500/-.

The conditions of living environment of families of the children revealed the following:

* Majority of them came from an urban slum, so the personal cleanliness of children was not upto the standard.

* Only few children had separate urinals/latrines in their houses. A majority of boys and girls used common latrines.

* Majority of all students mentioned that there was heap of garbage and stagnation of waste water around the house.

* Most of the girls from both classes (VI and VII standard) had better cleanliness concept than boys.

The five important concepts were selected. Based on the concepts the course content were prepared. The classes were conducted for the selected group for a period of 45 days, one hour per day for five days in a week. An exhibition was also put up. Finally the environmental education programme was evaluated.

The impact of environmental education of the children revealed the following:

* There was a significant improvement among boys and girls after education on the awareness of importance of taking bath.

* There was a significant improvement in the knowledge on the importance of healthy habits after education at one per cent level.

* There was a significant improvement among boys and girls after education on the awareness of the importance

of domestic cleanliness.

* There was a significant improvement in the knowledge on the awareness of effect of poor sanitation after education.

* In general, there was a significant improvement among boys and girls after education on the awareness of various disease caused by poor environmental hygiene.

* Majority of the children were of the opinion that adequate number of toilets, adequate water facility and proper drainage facility were very important to improve the environmental hygiene.

* After education most of the children mentioned that the proper method of disposing wastes were through proper drainage and sewage systems, using dustbins and recycling wastes.

* After education considerable improvement on the knowledge of causes and effects of various pollution was observed.

* The methods of recycling wastes as they understood were using biogas plants, manure pits, waste water to kitchen garden and paper making.

* The children should take up role to improve environmental hygiene after education were developing better hygienic habits, proper method of disposing wastes, proper cleaning of house and its surroundings and recycling the wastes.

Education to create awareness on environmental hygiene should be very simple but made as real as

possible to make the children understand and follow the information given to them. The knowledge on environmental hygiene of the children chosen for the study has improved and increased through the exposure provided to them. Therefore, it is important to formulate a curriculum with more practical exposure to enhance children's awareness and to encourage them to preserve environment.

Recommendations

Based on the present study the following recommendations are made:

* This study could be done with more schools and involving more number of classes right from the primary school children.

* It should not only be the voluntary and Research organisations that should impart knowledge on hygiene concepts and health education, but also it should be taken up by the teachers at various levels in schools and education institutions to spread the importance of environmental hygiene.

* The children should also be motivated to develop self learning on environmental hygiene through interesting campaigns, exhibitions and thought provoking programmes.

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APPENDICES

APPENDIX I

AVINASHILINGAM INSTITUTE FOR HOMESCIENCE AND HIGHER
EDUCATION FOR WOMEN (DEEMED UNIVERSITY)
COIMBATORE 641 043.

An interview schedule to elicit information on the
Environmental Concept Perceived by the School Students.

-
1. Name of the Investigator :
 2. Name of the Interviewee :
 3. Age :
 4. Class :
 5. Type of the family : a. Nuclear family -----
b. Joint family -----
 6. Information regarding family:

Name	Relationship with respondent	Age	Education	Occupation	Income
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7. Personal Hygiene

Particulars	Good	Fair	Poor
-------------	------	------	------

General Appearance
Cleanliness of :
Body
Dress
Teeth
Eyes
Hair
Nail
Skin
Toes

8. Healthy Habits:

- i. Are you eating nutritious food?
Yes No
- ii. Do you wash the hands before eating?
Yes No

- iii. Do you wash the hands and mouth after eating?
 Yes No
- iv. Do you wash the hands with soap after toileting?
 Yes No
- v. Do you wash your clothes daily?
 Yes No
- vi. Do you take bath daily?
 Yes No
- vii. Do you follow the hygienic way of drinking water?
 Yes No

9. Domestic cleanliness:

- i. Are you aware of how to keep the house clean and neat?
 Yes No
- ii. Do you have the following facilities in your house?
 a. Adequate water supply
 b. Proper drainage facilities
 c. Urinals/Latrines
 d. Dustbins
- iii. Do you have adequate air circulation and lighting in your house?
 Yes No
- iv. Is your kitchen clean?
 Yes No
- v. Do you have a separate latrine in your house?
 Yes No
- If no, where will you go for defecation?
 a. Common latrine
 b. open field
 c. road side
- vi. Are things arranged orderly in the house?
 Yes No

10. Exterior Environment:

- Condition of the space around the house.
- a. Stagnation of water
 - b. defecation
 - c. sewage water
 - d. Garbage
 - e. Industrial wastes

11. Do you maintain the class room neat and clean?
Yes No
12. Do you keep your school surroundings neat and clean?
Yes No
13. Do you follow the rules and regulations of the school?
Yes No
14. Do you know the effect of Poor Sanitation?
Yes No
15. Are your aware of various diseases caused by poor environmental sanitation?
Yes No

If yes, What?

16. What type of help you need to improve your sanitary habits?

APPENDIX II

AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER
EDUCAITON FOR WOMEN
(DEEMED UNIVERSITY)

COIMBATORE - 43

PROFORMA TO EVALUATE THE ENVIRONMENTAL CONCEPT OF
CHILDREN

1. Name :
2. Class :
3. Do you know the importance of personal hyginene?
Yes No

If yes, what are the hygienic ways of living?

4. Indicate the facilites needed for keeping the near environment clean:

5. What are the proper methods of disposing wastes?

6. Do you know the various diseases caused by the poor environmental sanitation?

Yes No

If yes, list:

7. What are the causes and effects of pollution?

Particulars Causes Effects

1. Water

2. Air

3. Noise

8. Do you know the importance of recycling the wastes?

Yes No

if yes, what way to recycling the wastes?

9. Indicate your role to protect the environment

APPENDIX III

METHOD USED FOR STATISTICAL ANALYSIS

TEST OF PROPORTION

The data collected on the knowledge and practice aspect of children in VI & VII Std classes regarding environment and sanitation before and after education was compared statistically using test of proportion.

$$P_1 = \frac{\text{No of yes in before education}}{n_1} \times 100$$

$$P_2 = \frac{\text{No of Yes in after education}}{n_2} \times 100$$

$$P = \frac{n_1 P_1 + n_2 P_2}{n_1 + n_2}$$

$$q = 100 - p$$

$$S_{p1 - P_2} = \sqrt{pq/n_1 + pq/n_2}$$

$$C_R = \frac{|P_1 - P_2|}{S_{p1 - P_2}}$$

$$n_1 = n_2 = 25$$

$$P_1 = 12/25 \times 100 = 48$$

$$P_2 = 21/25 \times 100 = 84$$

$$P = \frac{25 \times 48 + 84 \times 25}{25 + 25} = \frac{25 (48 + 84)}{50} = 66$$

$$q = 100 - 66 = 34$$

$$\begin{aligned} S_{p1 - P_2} &= \sqrt{34 \times 66/25 + 34 \times 66/25} \\ &= 2 \times (34 \times 66)/25 \\ &= 13.40 \end{aligned}$$

$$\begin{aligned} C_R &= \frac{|48 - 84|}{13.40} = \frac{|- 36|}{13.40} = \frac{36}{13.40} \\ &= 2.96 \end{aligned}$$

It is significant difference at 1% level.